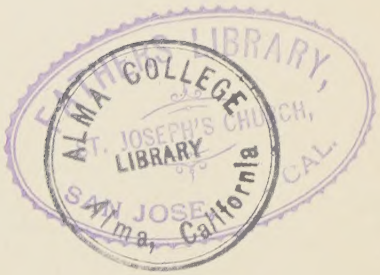
THE MIND

PYNE, S. J.


ALMA COLLEGE
LIBRARY
Alma, California

Digitized by the Internet Archive
in 2025

https://archive.org/details/mind0000john_d4r0

THE MIND

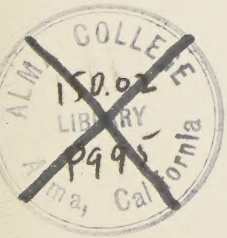
THE MIND

BY

JOHN X. PYNE, S.J.

PROFESSOR OF PHILOSOPHY

FORDHAM UNIVERSITY



NEW YORK, CINCINNATI, CHICAGO

BENZIGER BROTHERS

1926

COPYRIGHT, 1926, BY BENZIGER BROTHERS
Printed in the United States of America

Imprimi Potest: Laurentius J. Kelly, S. J.
Praep. Prov. Marylandiae-Neo-Ebor.

Nihil Obstat: Arthurus J. Scanlan, S. T. D.
Censor Librorum

Imprimatur ✠ Patricius Cardinalis Hayes
Archiepiscopus Neo-Eboracensis

NEO-EBORACI, die 9 Decembris, 1925

TO

THE PROFESSORS WHO INSTRUCTED
THE ASSOCIATES WHO AIDED
THE STUDENTS WHO INSPIRED
IN THE LONG YEARS DURING WHICH THESE
IDEAS WERE TAKING SHAPE IN MY MIND

FOREWORD

This book is the amplification of an earlier edition upon the same subject and under the same title. The following letter will throw some light on its origin and its character. The letter comes from a former student who is now engaged in business:

"October 11th, 1924.

"Dear Sir:

"Back in the spring of 1923 you remember you composed a book entitled 'The Mind,' written in a style, as you said, suited to 'the tired business man and his wife.' Traveling around the country since then, you would be surprised at the number of times I have been drawn into discussions involving the subject-matter of this book. In fact these became so much of a daily occurrence that I carried 'Maher' and 'The Mind' along with me all the time, and learned something every time I looked into them that I never knew was there.

"The point I want to emphasize is that you evidently overshot the mark at which you were aiming when you hit upon the style of that book, as it was taken from my dresser in a hotel a short time ago, and the only one who had been in the room, according to all the information I could get, was the chambermaid. It was not so much the loss of the book that disturbed me, but the fact that a chambermaid took it seemed to me to be casting a reflection on the class of '23. I am very anxious to secure another copy and would appreciate it if you would let me know if there are any more available."

The subject of the book is psychology, rational and phenomenal. The book aims to tell what the

mind is and how it works, to present the science of the mind.

It might be objected that the book should be entitled "The Human Mind," since the brute as well as man has a mind, and in this book only the nature and operations of the human mind are considered.

It seems sufficient, however, to say "The Mind" to signify "The Human Mind." Unless the context indicates that the mentality of the brute is under consideration, "The Mind" is understood by psychologists, no less than by the rest of the world, to mean the human mind.

In Part I, I have discussed the notion of science because some of the interpretations of mind which I reject are denominated by their authors "scientific."

If the term scientific is to be employed, its meaning should be understood. This is especially necessary when the advocates of "scientific" interpretations of the mind attempt to crush opposition by the weight of that authority which is the property of genuine science. When the word "scientific," enclosed in quotation marks, appears in the text, it refers to those interpretations of mind which I regard as pseudo-scientific.

While discussing science I introduce the subject of evolution. The discussion of evolution in this context serves a double purpose. First, it helps us to grasp the meaning of science by contrasting it with something which is not science. Secondly, it enables the reader to see from the very outset how my interpretation of mind is going to differ

from that which is given by most of the recent writers on "scientific" psychology.

As a rule they assume the evolutionary hypothesis to be true, and attempt to interpret the phenomena of mind upon that basis. The reader, therefore, will not understand my reasons for refusing to accept the interpretations of mind given by these authors unless he knows how my views differ from theirs concerning fundamental principles. Hence the discussion of evolution in Part I.

In Part II, I give my explanation of what the mind is. Some of the questions, such as the immortality of the soul, might seem out of place in a discussion of mind. But my experience has been that questions concerning the origin and destiny of the mind are inseparably connected with questions concerning its nature. It is better to treat the questions there and be done with them, rather than require them to be suppressed.

The modern method of presenting psychology is to discuss first the phenomena of the mind from the standpoint of production, and later, if at all, to take up the question of the nature of the mind.

There are, however, two practical difficulties against this mode of procedure. First, the student, in discussing mental products, wants to know the cause of them. He feels that if he could only discover what the mind is, all the mystery would be taken out of psychology. When the modern order is followed, this curiosity must be suppressed. And a suppressed curiosity is a constant irritation. It is a good psychological prin-

ciple so to arrange the presentation of the subject that natural curiosity will be satisfied when aroused.

Secondly, the students do not grasp the matter so readily and so thoroughly when the modern order is followed, as they do when the nature of the mind is first explained to them. Following the order which I have adopted in this book, I have taken through the subject classes whose only philosophical preparation was a course in formal logic. Yet they grasped the matter more easily and more thoroughly than other classes which had had much more preparation, but were carried through the subject according to the modern order.

The reason is obvious enough. Until the nature of the mind is established, the psychologist can offer little more than what William James calls "a string of raw facts, a little gossip and wrangle about opinions, a little classification and generalization on the mere descriptive level."

If the production of mental phenomena is to be adequately explained, the phenomena must be considered in the light of their causes. Not all psychologists give the same explanation of the production of mental phenomena. The idealist, the sensationist and the spiritualist, each gives a different explanation. The explanation of the production of the phenomena harmonizes with the nature of the mind, as each conceives it. Unless at the outset the author sets forth clearly his conception of mind, the student will not know what his conception of it is. And unless he justi-

for his conception, the student will not realize its truth or value.

The nature of the mind is not determined by its mode of operation. Rather it is the other way about. Psychologists explain the mind's mode of operation from their notion of its nature. This is the logical order.

Though a fact may be perceived without apprehending its cause, the explanation of the fact, if it is to be scientific, must show its relation to its cause.

It is common among those who follow the modern order to assume that a certain interpretation of mind is true, and on that assumption the production of mental phenomena is explained. The author may at the outset profess that he knows nothing of the nature of the mind. Later it may be evident from his explanation that he regards all mental phenomena as products of brain or nervous activity. A definite interpretation of mind is thus smuggled into the explanation. Without some notion of mind, either assumed or established, there is no possibility of explaining the production of mental phenomena.

Instead of assuming as known the nature of the mind, I assume that the reader does understand, or can be readily brought to understand, that the sensuous representation is always concerned with the particular, and that thought, as a representation, is, or may be, universal. These characteristics of our mental representations are so evident that they are immediately apprehended as soon as attention is directed to them. From these easily recognized characteristics of our mental repre-

sentations I argue to the nature of the powers required for their production. It is understood that these mental representations are effects. My argument is *a posteriori*—from effect to cause. From the known characteristics of the effects, I argue to the nature of the producing powers. Having established the nature of the producing powers, I trace them to their root principle. I then proceed to discuss the nature of the root principle itself, its origin, and the possibility of its existence after separation from the body. This principle, as the primary principle of all the powers by whose activity consciousness is produced, is what I call the mind.

I assume only what is evident, and infer what can be known only by inference.

Having determined in my discussion of Rational Psychology what the mind is, I show in Phenomenal Psychology how it works. The relation of the phenomenon to its cause is understood, because the nature of the cause has been established, not merely assumed.

In presenting my view of mind in Part II, I first undertake the work of a wrecking company. I clear the ground of the interpretations of mind which do not meet with my approval. Having cleared the ground, my next task is the work of the construction company. To carry on the work of construction we require a master-builder, one upon whom we can rely to carry the work to completion. The philosopher whom I select for this task is St. Thomas Aquinas, the "Angel of the Schools." He is able to carry through his contract without any danger of default.

St. Thomas has a complete system of psychology. It is true that he is not the only scholastic psychologist. The writings of all the scholastic psychologists, if assembled in one library, would fill many miles of shelves. Evidently we cannot take notice of all of them.

Nor is it necessary. The builder I have selected will carry his work to completion. Others might do better work on particular parts. Their contributions should have a place in a work intended for more advanced students. But to supersede the builder selected for our constructive work would cause distraction, if not confusion. The new man would have to be introduced, and his system explained, or his contribution would not be understood.

When stating opinions, instead of requiring the reader to take my word for the truth of a statement I present the evidence. There are long quotations in the book from the writings of the philosophers whose opinions I discuss. I was not inclined originally to employ this method, but I found there was no other way to produce conviction. Readers have views of their own, and when an author's statements disagree with the views which they have formed about facts, they quite naturally think he is wrong. Moreover they have a right to the evidence. When a philosopher is charged with holding a certain opinion, the reader has a right to see the evidence for it. The quotation is the evidence. These quotations are cumbersome, but useful. Moreover, as they are printed in special type, one need not read them unless he chooses to do so.

The order which I am following is the one chosen by Aristotle in his Psychology:

> "The Psychology proper (*De Anima*, as we generally call it), contains within the compass of some eighty or ninety pages the chief points in the psychological doctrine of Aristotle. It consists, as usually divided, of three books; of which the first is in the main an historical retrospect of pre-Aristotelian psychology; the second lays down the famous definition of the soul and analyzes at some length the faculties of sense-perception; while the third, if we regard the first and second chapters as belonging to the second rather than to the third book, is chiefly occupied by thought and will." [1]

In Part II, I give an historical retrospect and formulate my definition of mind; in Part III, I consider the sensuous faculties and their activities; and in Part IV, I take up thought and volition.

Understanding the plan which I have adopted, the reader will easily see why I do not give many references to other books. Usually, if I wish to make any use of a passage from another book I incorporate it into the text. Having the texts before me, nothing remains but to state the recognized facts and to draw the proper inferences from them.

There is one book, however, which I wish to recommend to all who desire to make a thorough study of psychology, and that is *Psychology,* by the Rev. Michael Maher, S. J. The book is one of the collection known as the "Stonyhurst Series."

There, if one chooses to look for it, he can find

[1] *Aristotle's Psychology,* Wallace, Introduction, xiv.

an abundance of erudition upon the entire subject. He will find the opinions of the various schools of scholasticism, as well as of the non-scholastic schools, and an abundance of references to their works.

One who wishes to consult books by the non-scholastics of today will find nearly every library well supplied with them. It is only on the shelves set aside for English books on psychology, and marked "Scholastic," that there is plenty of room. The other shelves are crowded. Scholastic psychology possesses a wealth of literature in the Latin language, and in many of the modern languages of Europe outside of English. But, as yet, English books on scholastic psychology are few.

John X. Pyne, S. J.

Fordham University, June 25, 1925.

CONTENTS

FOREWORD vii

PART I

PRELIMINARY NOTIONS

SECTION — PAGES

1. MEANING OF PSYCHOLOGY: etymology, use, divisions 1–4

2. SCIENCE: Definition; use; use of "scientific"; illustrated by application to evolution, said to be scientific, yet shown to be not science, not even a theory, merely an hypothesis, ... 4–14

3. THE SCIENTIFIC THEORY: Definition, illustration, the atomic theory; scientific theory not science, ... 15–16

4. PRAGMATISM: Definition; an overemphasis upon a truth; gives no recognition to science in true sense, 16–18

5. ANOTHER DEFINITION OF SCIENCE: Huxley's meaning, ... 18–19

6. THE PARTICULAR SCIENCE: Definition; relation to assumptions *(note)*; elements of definition:
   (A) truths, scientific differ from philosophical in relation to causes; hypothesis precedes science;
   (B) subject-matter, material object, formal object;
   (C) method, definition, ... 20–23

7. DIVISIONS OF SCIENCE OF PSYCHOLOGY TO BE TREATED: Phenomenal, rational, ... 23

SECTION PAGES

8. PHENOMENAL: (A) Truths; (B) Subject-matter; (C) Methods, subjective, objective.
(I) Subjective, by introspection; subconscious states; abnormal states.
(II) Objective by study of mental activity as outwardly expressed, ... 23–27

9. RATIONAL: Attitude of "scientific" psychologists towards subject of mental states; of scholastic psychologists towards metaphysics. Rational psychology alone connects mental facts with their cause; hence absolutely necessary to all other branches of psychology to be recognized as genuinely scientific, ... 27–30

PART II

RATIONAL PSYCHOLOGY

10. FUNCTION OF RATIONAL PSYCHOLOGY: definition of mind in *Century Dictionary;* "mental" defined. Method of presentation: answers already given to question, What is meant by mind, to be considered; schools chosen, Idealistic, Empirical, Double-Aspect, Spiritualistic; exponents selected, . 31,32

11. THE IDEALISTS: (A) Berkeley, texts, meaning; Hume's extension of Berkeley's principle; Ward on Berkeley; impossible and unnecessary to demonstrate truth denied by Berkeley, ... 33–38
(B) Fichte, texts, meaning, criticism, ... 39,40

12. THE EMPIRICISTS: (A) Titchener, his analogy, its defects; his definition one of the accepted definitions, Ward; his misuse of the definition, ... 41–43
(B) James, texts, criticism, his use of "thought" *(note)*, the thought and the psychologist, . . 43–49

SECTION PAGES

13. THE DOUBLE-ASPECT SCHOOL: Dr. Bain's answer, texts; Herbert Spencer's answer, texts; overemphasis upon truth; resemblance in language of Bain and Berkeley, difference in meaning. Bain and Spencer disagree on universality in intellectual representation; Bain right on logic, Spencer on facts; hence necessary to recognize suprasensuous power in mind; an argument from common sense, ... 50–56

Inference from investigations conducted: A new hypothesis necessary; different applications of it possible; exponents, ... 56, 57

14. THE SPIRITUALISTS: (A) Descartes, texts; meaning; criticism: (I) Is the body of man a mere machine? (II) Is sensation an act of the soul alone? 58–63
Facts, principles, inferences, ... 63–66

Consequences of Descartes' philosophy: acceptance by "scientific" psychology of subjective criterion; how old system overthrown, Winterton; condition of "scientific" psychology today, James; observations upon remarks of James, (I) present, (II) future; necessity of looking into past before future; St. Thomas and his metaphysics; Cartesian inability to grasp exposition of St. Thomas, due to lack of metaphysics; difficulties of realizing hope expressed by James, . 67–79

(B) St. Thomas, texts; his tenets as opposed to other psychologists, separately stated, . . . 80–85

The Scholastic
Argument in Form of Propositions

15. PROPOSITION I: "There is a vital principle in every living body." Definitions; differences between the living and non-living body, (I) power of immanent activity, (II) unity; hylomorphic

SECTION PAGES

theory explained; in terms of hylomorphism the vital principle is the substantial form; the vital principle is the soul; life is not the resultant of a special collocation of atoms, ... 86–96

16. **PROPOSITION II: "The sensuous powers have their subject in the sentient body."** Texts from St. Thomas. St. Thomas between Descartes and materialists. The two sides of the shield *(note)*; facts which show sensation to be function of body; Ladd's view similar to Descartes'; Ladd's definition of mind a definition of consciousness *(note)*, ... 96–102

17. **PROPOSITION III: A. "The Intellect is substantial"; B. "Spiritual"; C. "Not different in substance from the animating principle of bodily life."**
A. TEXT FROM ST. THOMAS; intellect as substantial as the dynamo; the pool of thought; without it James and Hume could not explain production of thought; apprehends itself through its own acts; Kant denies; Newman's view; metaphysical significance of proposition, ... 103–107

18. *B.* INTELLECT SPIRITUAL; spirituality and simplicity distinguished; principle and facts; Darwin's view untenable, ... 107–111

19. *C.* INTELLECT NOT DIFFERENT IN SUBSTANCE FROM SOUL; an incomplete substance; fundamental fact, unity in man; objection from Averroes answered; view of Averroes favored by James. Locus of the soul, entire in entire body; soul has no quantity like body; not a material entity of any sort, Dr. Lake; Law of the Conservation of Energy does not militate against mutual interaction between body and intellect, ... 111–122

20. **PROPOSITION IV: "The human soul originates by creation."** Origin of substantial forms, inorganic, organic; argument of St. Thomas. *(Note):* Cre-

SECTION PAGES

ation defined, argument of St. Thomas briefly discussed. Time of origin: Plato, Origen, St. Augustine; St. Thomas; text; reasons against his view; a practical question for Catholics, ... 122–130

21. **PROPOSITION V: "The human soul is immortal."** Definitions; point at issue, natural immortality; differences between human soul and chemical compound, the organism, the animal soul; annihilation absolutely, not naturally possible; objections, Kant, James, answered; reasons why God should not annihilate; necessary for discussion to assume existence of God, otherwise no meaning, ... 131–138

22. OUR DEFINITION OF MIND: To be in terms of philosophy of St. Thomas. Important terms, subject, principle; defined; texts; "conscious subject" not satisfactory. Can mind as coextensive with consciousness be defined in terms of the philosophy of St. Thomas? Our definition; value of it; objection, answered; soul and mind not synonymous; Aristotle *(note)*, ... 139–152

23. FACULTIES OF THE MIND: Objection, Baldwin; evidence for existence of faculties; relations to organism; differences between them; relation to soul. Views of Plato, Aristotle *(notes)*, ... 153–159

24. MAN A PERSON: Personality as understood by Plato, Berkeley, Descartes, James; scholastic definition, rational supposit; permanence of personality, . . . 160–162

Introduction to Parts III and IV

SECTION PAGES

For discussion of phenomenal psychology some system of rational psychology must be assumed; Sully; subject, mental phenomena, sensuous, rational; aspect; nature, origin, relations to one another; as a science, psychology considers universals; not of intense human interest; can be indefinitely divided, ... 163–169

PART III

PHENOMENAL PSYCHOLOGY

Phenomena of the Sensuous Order

25. SENSATION AND PERCEPTION: Structure and functions of the nervous system; terms defined; the mental photograph; sensation distinguished from perception; *species impressa et expressa*; percept defined; definitions assembled *(note)*. Intensity, quality, duration of sensation, ... 170–181

26. SENSUOUS PERCEPTION DISTINGUISHED FROM THOUGHT: Illustrated from experience of Miss Helen Keller, ... 181–184

27. ACQUIRED PERCEPTION: A term for judgment based upon sensuous perception, ... 184–185

28. THE COMMON SENSE: What the mind can do with its percepts, meaning of internal sense; confused notion, Sully; functions of common sense illustrated; definition, ... 186–192

29. MEMORY: Functions. Phantasm defined. Powers of memory both sensuous and rational. Retention, Reid, St. Thomas; Dr. Thomson's analogy. Reproduction, spontaneous, voluntary; laws. Recognition, identification in representation. Train-

SECTION PAGES

ing memory, a permanent power; scientific training, assimilation necessary; memory a library, intellect the scientific librarian. Importance of scientific training, ... 193–209

30. IMAGINATION: Distinguished from common sense, memory; general importance of; wit and humor. Acts, spontaneous; dreams; psycho-analysis; cheerfulness and worry; sensual emotions; auto-suggestion; alternating personality. Controlled acts, passive imagination, propaganda. Active imagination; creative; creative and social ideals; cultivating creative imagination, ... 210–233

31. SENSUOUS APPETITE: Definition, functions; manifested in movement; kinds of movement; can impel to action in normal person, cannot compel, . 234–240

32. EMOTIONS: Distinguished from sensations; manifestations; passion, as emotion; as permanent propensity, illustrated; relation to love; classification; emotion and conduct, ... 241–252

33. INSTINCTS: Definition, animal, illustrated; animal and human mind contrasted, Powell; instinct not a univocal term *(note)*; characteristics of human instincts, James, Norsworthy; instincts distinguished from passion *(note)*; human instincts illustrated; of a gentleman; educating instincts, . 253–262

PART IV

PHENOMENAL PSYCHOLOGY

Phenomena of the Rational Order

Phenomena of Intellectual Consciousness, Enumerated, Explained; St. Thomas

34. INTELLECTUAL APPREHENSION: Distinguished from sensation, ultimate element of intellectual acts; 263–266

35. THE POWERS WHICH PRODUCE THE INTELLECTUAL APPREHENSION: Powers which produce it; opinions, criticism; the scholastic theory, explained, resumé *(note)*, ... 266–276

36. UNIVERSALITY IN THE INTELLECTUAL APPREHENSION: Transcendentals, categories, ... 276–278

SECTION PAGES

37. THE PROCESS OF FORMING THE SPECIFIC APPREHENSION: Illustrated, an Englishman at a baseball game; activity of intellect analytic, synthetic, . . . 278–282

38. OBJECTIVE BASIS FOR UNIVERSALITY: Objective similarities, ... 282, 283

39. APPREHENSION OF THE UNSEEN: By analogy, ... 283–285

40. CONCEPTS FROM WORDS: Aided by memory, imagination, abstraction, ... 285, 286

41. CONCEPT OF SELF: Resultant of all the concepts the individual has formed of himself, ... 286, 287

42. APPREHENSION OF THE SINGULAR: By a universal representation, St. Thomas; by individual representation, Suarez; appears to result from a synthesis of abstractions, ... 287–291

43. HOW THE INTELLECT EMPLOYS APPREHENSION: by means of judgment; illustrated, ... 292

Judgment: Defined; immediate, mediate; analytic, synthetic; involves comparison, intellectual perception, assent 293–296

44. REASONING: Meaning, a search for the "why" of things; natural; *a posteriori; a priori*, ... 297–315

(A) Methods: Induction; deduction, ... 299

(B) Inference: A step in the reasoning process, ... 299, 300

(C) Formal inference: Syllogistic; guarantees correctness, ... 300, 301

(D) Informal inference: Ordinary mode; can be expressed formally; Newman's informal inference expressed formally, . . . 301–304

(E) Testing inferences: Application to facts of principles known with certainty, application of the laws of logic, ... 304–307

(F) Reasoning and Science: Science demands that reasoning connect facts with proximate cause, Newton, ... 307, 308

SECTION PAGES

(G) Reasoning and Philosophy: Connects facts with ultimate cause, ... 308

(H) Reasoning and Scientific Progress: Because science has ascertained causes of facts, the world more comfortable than in past, ... 308, 309

(I) Reasoning and Individual Progress: In business, political, social life, success generally depends upon correct reasoning, 309,310

(J) Reasoning and Education: Man rarely reasons, Titchener; present day education, Chapman, *(note)*; education can develop power to draw correct inferences from application of principles to facts; act of reasoning not the same as apperception of another's reasoning, Le Verrier; some reason in scientific work, all in daily tasks, ... 310–315

45. DAY-DREAMING: Not reasoning; may be occasion of reasoning, ... 315–317

46. CONVERSATION: Results of reasoning expressed; inferences constant, actual reasoning rare in conversation, ... 317–319

47. APPERCEPTION: Defined, illustrated. Necessary for intellectual progress; in education; fact or principle not readily assimilable, resisted; contradictory judgments possible in same mind when no attempt at assimilation, ... 319–323

48. WILL: Definition. Distinctions, motive, desire, deliberation, choice; manifestations of will; power to control due to union of all powers in one soul; not equal control over all powers, ... 324–330

49. HABIT: Definition. Dependence upon nervous system; brain, subject of tendencies, ... 330–333

SECTION PAGES

50. CHARACTER: Definition. Influence of will; St. Ignatius; Lincoln; each fashions his own character, 333–335

51. FREE WILL: Definition. Man contrasted with electricity, animal; evidence of, boy in college, social system; psychological basis; relation of will to intellect, to finite, ... 335–340

52. FREE WILL AND ASSENT: In judgments speculative, assent sometimes necessary, sometimes free; practical, always free in this world, ... 341–350

53. RÉSUMÉ, in form of question and answer, ... 350, 351

54. IDEO-MOTOR ACTION: Definition. Point at issue, responsibility, ... 352–357

55. OBJECTIONS TO FREE WILL: Answers, ... 358–369

AFTERWORD 370

INDEX 371

THE MIND

THE MIND

PART I

PRELIMINARY NOTIONS

1. Meaning of Psychology.—The English word "psychology," derived from the two Greek words, *psyche,* which means "soul," and *logos,* which means "word" or "science," literally signifies "word about the soul," or "the science of the soul."

The word "soul" is employed in various senses, sometimes to signify the rational powers of man, sometimes to denote the active principle of sensuous life in man, sometimes the moral and emotional side of man's nature, sometimes as the active principle of all life in man.

What meaning should be assigned to the word "soul" we shall attempt to determine later. It is sufficient here to call attention to the etymological sense of the word "psychology." But whatever its etymological sense, today the word "psychology," outside the scholastic circle, is commonly employed to signify the "Science of the Mind."

William James writes:

> "The definition of psychology may best be given in the words of Professor Ladd as 'the description and explanation of states of consciousness as such.'" [1]

[1] *Psychology,* p. 1 (Henry Holt and Co.).

This definition indicates the sense in which the word "psychology" is used today.[1]

True, it is an arbitrary use of the word. But all words are merely arbitrary signs of thought; and if the present generation is resolved to employ the word in this sense, it will be of little use to oppose it.

To understand what is meant by "Psychology," when employed to signify the "science of mind,"[1] we must understand what is meant by "mind." It will be the purpose of this book to make that word understood, to declare what the mind is and how it works.

Even when the word "psychology" is used to signify the "science of mind" it is employed in so many connections that it has become a term of confusion. There is abstract, comparative, empirical, evolutionary, scientific, phenomenal, rational, business, psychology; there is the psychological moment, manner, and so on ad infinitum. Psychology, like Mesopotamia, is a blessed word; but it is very much to be feared that its multifarious uses are responsible for a great deal of irritation.

But every object which falls within the extension of a genus must have something in common with some other things. The thing which is common to all the species of psychology—as that word is understood today—is mind. Every department of psychology is occupied with mind. The object of every branch of psychology is to

[1] "'Mind' might well be said to occupy the same place in our day which 'psyche' did in Aristotle's times." (*Aristotle's Psychology*, Wallace, XLVIII.)

learn, or to teach, something about the mind, either what it is, or how it works.

If the reader will keep clear in his thought the generic idea which is expressed by the word psychology, the specific meaning which is added to it by the adjective may be inferred or conjectured. Concerning the species above enumerated there need be no special difficulty, since they are all defined in the dictionary.

Thus, *abstract* psychology is said to deal with the general phenomena of the human mind, their classification and the laws by which they are governed. *Comparative* psychology is occupied in the comparison of the mental states of several different species of animals. *Empirical* psychology studies mental states, especially as they reveal themselves by outward manifestation. *Evolutionary* psychology attempts to trace the development of mental power in the race. *Scientific* psychology gets its results, as physical science demands, by measurements. *Phenomenal* psychology studies the production of mental acts, and the relation of one act to another. *Business* psychology studies the effect of business conditions upon the mind of capitalist or laborer, or the manner in which the mind of the prospective buyer or seller reacts to arguments of various types. The *"psychological moment"* is the moment when the mind is prepared to react favorably to a situation, the moment at which a lover should propose, a salesman suggest a deal, or a political manager present the name of his candidate to the delegates assembled in convention.

The object in view in this first chapter is to

present the preliminary notions which are necessary for the understanding of the discussions that follow.

2. Science.—Psychology is the "science of mind." What is meant by science?

The word "science," like the word "psychology," is of very ancient ancestry. But while "psychology" is of Greek origin, "science" is of Latin stock. It is derived from the Latin word *scientia,* which means "knowledge."

"Science," when used strictly, always embodies the idea of knowledge. Used in relation to what is known as *a* science it signifies knowledge about a particular subject, resting upon ascertained laws, and embodied in a system of thought which is expressed in the form of statements.

As employed today, "science" is commonly restricted to signify physical science, including physics, chemistry and biology with their numerous subdivisions. On this subject Sir Oliver Lodge declared in his address to the British Association:

> "Science is systematized and metrical knowledge, and in regions where measurement cannot be applied it has small scope; or, as Mr. Balfour said the other day at the opening of a new wing of the National Physical Laboratory, 'Science depends on measurement, and things not measurable are therefore excluded, or tend to be excluded, from its attention'."[1]

Science, as understood by Sir Oliver Lodge, aims to ascertain the facts which belong to the

[1] For this quotation, and for the entire discussion of science, see *The Church and Science,* ch. I., by Sir Bertram Windle (Herder).

subject-matter under consideration, to classify these facts, and to formulate the laws which govern them. As a consequence of the application of this method, science has revealed to man the possibility of capturing what appeared to be the wild forces of nature, of taming them, of bringing them into his service, and of accomplishing through them results which otherwise could never have been attained.

The knowledge acquired by the method of measurement deserves to be called science, and the person who acquires knowledge by these means is entitled to be called a scientist.

But not all the propositions which today are called scientific can sustain the test laid down by Sir Oliver Lodge. They do not all conform to ascertained facts, nor have the operations of the agencies in question been subjected to measurement. It is important to segregate genuine science from the imposture which often bears its name.

Because science results from the efforts of men occupied with science, these men are called scientific, and the inferences which they derive from their study are also called scientific, or simply science. The uncritical public is likely to attribute to all the inferences of scientific men the certainty which belongs to science only in its strict sense.

On the very day on which these lines are written, the newspapers carry an account of a sermon delivered by a distinguished preacher, denouncing an exhibit in the "Hall of the Age of Man" in a public museum in New York City, and the reply of the curator of the museum.

The exhibit is based upon the theory of transformism, or of evolution, as it is commonly called.

The preacher thus expresses his estimate of the value of the exhibit:

> "I verily believe that if the little basketful of musty old bones and fossils which have been found after all these years of search in every part of the world were brought together and presented as evidence for the evolution of man, in any court of law, it would be thrown out of court with the utmost scorn by judge and jury alike. They are not evidence according to any rules of evidence, either in law or true science." [1]

The curator replied:

> "The Museum speaks for itself. There can be no arguments. There are only facts. The Museum is not a collection of theories. Everything is taken from nature from top to bottom." [2]

Evidently the preacher and the professor set very different estimates upon the value of the facts. What is evidence in the judgment of the professor is merely a problem in the judgment of the preacher.

A newspaper, commenting editorially upon the preacher's attack, observed:

> "Every statement made in explanation of the Exhibit is based on scientific research and is supported by scientists generally." [3]

The exhibit in question was supposed to illustrate the various stages in the development of the human race from some inferior species of animal. As "taken from nature" the Trinil Remains, the Piltdown Skull, the Heidelberg Jaw, etc., have

[1] Rev. Dr. John Roach Straton, New York.
[2] Professor Henry Fairfield Osborn.
[3] New York *World*, March 10, 1924.

not that definite appearance which is imparted to the works of art which are supposed to illustrate the races to which the fossils originally belonged.

The exhibit is based upon the assumption that "evolution," in the sense of transformism, is a scientifically established truth.

The term "evolution" may be used in many senses. It may signify development in its most general acceptation. It may signify the development of the individual body from the condition of a fertilized cell into the mature structure which characterizes a particular species. It may signify the development of individual members of a species from one degree of perfection to another. It may signify the hypothesis that all the specific forms of life which we see in the world today have developed from some form, or forms, unicellular or multicellular, through countless changes into their present condition. It is evolution in the last sense that is the subject of so much controversy today. In this sense it is often called "transformism." Inasmuch as it owes its present vogue to Darwin's presentation of it, transformism is often called Darwinism. But Darwin did not originate the evolutionary hypothesis. His contribution consisted in the enunciation of the "laws" which, he assumed, determined the course of evolution, and in the assembling of facts to support the hypothesis.

Evolution may be materialistic or theistic: materialistic, when the world is regarded as self-existing; theistic, when the world is regarded as having been created by God.

Materialists, who refuse to regard the human

soul as a spiritual, substantial principle, include the human, as well as the animal, mind within the scope of evolution.

Theistic evolutionists who recognize the human soul as a spiritual, substantial principle, exclude it from the scope of evolution.

That theistic evolution, as applied to merely vegetative and sentient life, is absolutely possible, is evident from the fact that it involves no contradiction in terms. The Infinite Cause can produce any effect which does not involve self-contradiction.

Is transformism a law of nature? That is a law of nature which is a constantly recurring phenomenon of nature. Is the transformation of living bodies from species to species a constantly recurring phenomenon of nature?

So far as evolution concerns only vegetative and sentient life, the changes required by the theists are the same as those required by the materialists.

Here we may ask two questions: (1) What sort of change is required for transformism? (2) What is the value of the evidence offered by evolutionists in support of their hypothesis?

To give an answer to the first question we must state what is understood by the term "species."

By "species" in the biological sense may be understood a group of living bodies capable of interbreeding indefinitely. As living bodies exist today, they do not all interbreed indefinitely.

By "species" in the philosophical sense may be understood a group of living bodies divided from

other living bodies by a specific difference. Philosophically, all animals outside the human may be said to belong to the same species. They all belong to the same genus to which man belongs, "animal." Man is differentiated specifically from all other animals by his possession of "rationality."

All animals, rational and irrational, are differentiated from merely vegetative bodies by "animality."

Philosophically speaking, there would be no transition from species to species if one form of plant life were to develop into another form of plant life, or if one form of brute life were to develop into another form of brute life.

But if a plant were to develop into a brute, or a brute into a man, that would be transformism in the philosophical sense, for in that case by transformism a new specific difference would be acquired.

There is no question at issue here about modifications within the boundaries of the biological species. Such modifications are called "accidental," not specific. "Accidental" modifications, modifications which do not involve specific change, are evident facts. No one questions them. The point in dispute is the specific, not the accidental, change.

Now for the second question:

Both the origin of the hypothesis and its basis in fact are stated by Darwin in his own words, in *The Life and Letters of Charles Darwin,* by his son, Francis Darwin:

"My first note-book was opened in July 1837. I worked on true Baconian principles, and without any theory collected facts on a wholesale scale.

"In October 1838, that is, fifteen months after I began my systematic enquiry, I happened to read for amusement *Malthus on Population*, and being well prepared to appreciate the struggle for existence which everywhere goes on from long-continued observation of the habits of animals and plants, it at once struck me that under these circumstances favorable variations would tend to be preserved, and unfavorable ones to be destroyed. The result of this would be the formation of new species. Here then at last I had got a theory by which to work; but I was so anxious to avoid prejudice, that I determined not for some time to write even the briefest sketch of it. In June, 1842, I first allowed myself the satisfaction of writing a very brief abstract of my theory in pencil in 35 pages; and this was enlarged during the summer of 1844 into one of 230 pages, which I had fairly copied out and still possess." (vol. I, p. 68.)

The *Origin of Species* was published in 1859. For seventeen out of twenty-two years, during which he was working on "true Baconian principles," he had his theory already formulated![1]

[1] Professor Louis T. More in *The Dogma of Evolution*, an eminently philosophical critique, published by the Princeton University Press, expresses his estimate of the scientific value of Darwin's work in the *Origin of Species* as follows:

"It is almost unaccountable that his contemporaries regarded his 'Origin of Species' as a model of scientific accuracy and thought and passed this estimate on to us, when a careful analysis of its contents shows that his argument for natural selection is based on the vague confirmation from geology that species have in some way changed and on the analogy of changes in domesticated animals and plants by man's selective breeding." (p. 195.)

In another passage Darwin writes:

> "In fact, the belief in Natural Selection must at present be grounded entirely on general considerations: (1) On its being a *vera causa*, from the struggle for existence; and the certain geological fact that species do somehow change. (2) From the analogy of change under domestication by man's selection. (3) And chiefly from this point of view connecting under an intelligible point of view a host of facts. When we descend to details we can prove that no one species has changed (i.e., we cannot prove that a single species has changed); nor can we prove that the supposed changes are beneficial, which is the ground-work of the theory. Nor can we explain why some species have changed, and others have not. The latter case seems to me hardly more difficult to understand precisely and in detail than the former case of supposed change. Bronn may ask in vain, the old creationist school and the new school, why one mouse has longer ears than another mouse, and one plant more pointed leaves than another plant." (*Op. cit.*, vol. II, p. 210.)

So far as facts are concerned, the evolutionists of today are no better off than Darwin was.[1] And Darwin, according to his own confession, did not have a single fact.

[1] Professor More sums up as follows his estimate of the value of the evidence upon which the evolutionary hypothesis rests:

"It is quite safe to say that today in spite of an immensely increased collection of fossils, the positive evidence of geology, considering the vastness and intricacy of the problem of evolution, is as incomplete as it was in the time of Darwin and Huxley. It is equally safe to say that it will always be incomplete; that lacking this concrete presentment of the structure of our ancestors, evolution must continue to be a faith, or deductive hypothesis, which will gradually be strengthened or contradicted by evidence found in the structure and growth of living forms, but cannot be satisfactorily established by such secondary evidence." (*Op. cit.*, p. 118.)

To protect themselves against the difficulties resulting from the fact that there are no present facts to support their explanation, evolutionists run away into the unknown past.

John Fiske writes:

> "We see man existing here on earth, no one can say how long, but surely many hundreds of thousands of years."[1]

John Fiske may see this as a "seer," but not as a scientist. It is not an ascertained fact that man has existed on earth "many hundreds of thousands of years." There is a title to one of his chapters which appears particularly applicable to his proposition: "Guessing at half and multiplying by two."

The problem of the origin of bodily differences is only one of many which confront evolutionists. They must also account for the origin and development of consciousness.

St. Thomas has a discussion about the mode by which angels communicate their thoughts to one another. It is a difficult subject for a man to handle while he is dependent upon the senses for the proportionate object of his knowledge. He is evidently hampered by a lack of facts. But St. Thomas was no worse off for facts while discussing the transference of angelic thought than are the evolutionists who attempt to describe the mental processes of the lower animals in their progress towards the higher forms of animal life.

One of their ungrounded assumptions is the equality of mental development at any given period, that when the cave-man existed all were

[1] *A Century of Science*, p. 104.

cave-men, that the cave-men existed hundreds of thousands of years ago. Yet in Job, we find evidence that in Job's time, which is but yesterday, as evolutionists reckon human time, "They dwelt in the desert places of torrents, and in caves of earth, or upon the gravel." (ch. xxx.) Side by side with the cave-men were philosophers and artists of the highest order.

When it comes to facts to prove transformism the evolutionists of today are in a worse plight than the cardinals who condemned Galileo. They have not even the fact of appearances in their favor. In so far as the "comparative" sciences have ascertained facts they testify that between man and the lower animals there are both differences and similarities, that both similarities and differences are equally persistent, that humans do not lapse into brutes, that brutes do not emerge into humans. There is a line of demarcation between them which has never been known to be crossed. Evolutionists assume that the line has been crossed. They have ransacked the records of nature pretty thoroughly. Yet they cannot point to a single instance to support their assumption.

The hollowness of the pretensions which evolution makes to be regarded as science is evident from the fact that it is totally divorced from fact. Existing facts contradict it. Evolutionists are justified in making the assumption that all life is subject to the law of transformism. But though, for the sake of investigation, they may assume the truth of the universal proposition, they may not assume that the facts support this assumption.

They must establish the particular facts. And where are the established facts which show that transformism actually did occur in the past? The earth as the burial ground of the dead animals of ages past is eloquent of death. It is silent about their origin. The investigator may infer as much as he chooses. But inference is not evidence. The court of science, like the court of law, requires evidence, not inference. Everybody can appreciate evidence, and must assent to the truth which it establishes. Mere inferences, apart from evidence, may be formed at will and do not compel assent. When evolutionists supply the evidence which is necessary to support their assumption, the world will assent to the truth of it because evidence compels assent. When that happens, if it ever does, evolution will be no more discussed than is the rotation of the earth.[1]

Evolution is usually described as a "scientific" interpretation of life. It is scientific only in the sense that it is an interpretation of life which is commonly entertained by one class of men whose efforts are devoted to the advancement of science. But what is "scientific" in this sense is not necessarily science. Evolution is not only not science; it is not even a scientific theory, in the strict sense. It is merely an hypothesis, and an hypothesis which is not supported by facts.

[1] A humorous illustration of the distance which the evolutionary hypothesis must traverse before it takes rank with the rotation of the earth as a scientifically established truth, was given in a cartoon which appeared lately in one of the New York newspapers.

Two elderly ladies are conversing in a subway train.

First Lady: "What do you think of evolution?"

Second Lady: "My dear, I am afraid we shall never live to see it."

3. **The Scientific Theory.**—Not every enunciation of a scientific man is the expression of knowledge. Knowledge is the final product. The scientist must first ascertain the facts of his case. He must assemble those facts and classify them. Having assembled and classified his facts, he must attempt an explanation of them. He proceeds tentatively, making some provisional assumption. If this hypothesis, as his assumption is called, offers a rational explanation for *all* the facts he has collected, he has a *theory*.

A scientific theory is a close approximation to science. But it is not science. A theory may harmonize with all the known facts. Yet further investigations may demonstrate that the underlying assumption is not true.

For many years it was assumed [1] by the lesser scientific lights—though the far-seeing ones like Faraday avoided the error—that the ultimate constituents of bodies were atoms, numbering seventy or eighty, differing from one another specifically, and all irreducible elements. Today the theory is that the atoms themselves are compounds of elements called electrons. As a working hypothesis, the atomic theory remains as serviceable as ever. As a speculative proposition it appears now that so far as the ultimate constituents of bodies are concerned, the theory, as popularly understood, did not express the truth.

It is clear, therefore, that there may be a great chasm between that which is real science and that which is merely scientific. Science is knowledge

[1] See *The Electron* by Robert A. Milliken, p. 155.

of the truth. It is the conformity of the mind to the objective facts. Science can be increased; mental conformity can become more perfect. Science is like a photograph. In so far as it represents its object at all, it represents it correctly. The object photographed may change; but, when photographed, it was as represented by the photograph. The photograph never becomes false. Nor does genuine science ever become false, no matter what additions the mind makes to it.

What is merely scientific, on the contrary, may turn out to be false, though in its day it may serve a purpose by helping to the attainment of genuine science.

Science can never conflict with truth, though scientific assumptions can conflict with truth. In this conflict, when it occurs, obviously it is the scientific assumption which must be abandoned.

4. Pragmatism.—Pragmatism, as a system of philosophy, not merely as a method, reduces science to the level of the hypothesis. But science should be more secure than a mere hypothesis; else, we can legitimately suspend assent to every scientific conclusion. It is possible that only a few truths are scientifically established. And it is certain that comparatively few persons are capable of demonstrating scientific truths. How few, of all those who accept it as a scientifically established fact that the earth rotates on its axis, are capable of expounding the demonstration! The bulk of mankind must take its science, as it takes its religion, on faith. But this is not the same as saying that no scientist possesses true scientific knowledge of any of the propositions which con-

cern his subject. It is here that we take issue with pragmatism. Pragmatism would rob the scientist of all title to the possession of genuine knowledge and allow him the credit only of correct inferences based upon hypotheses. We are inclined to think that modern progress is based, in some measure, upon genuine science. Further investigations will undoubtedly yield a larger measure of truth. Science at best is only an aspect of the whole truth. The mind of man can apprehend the truth. It cannot comprehend the truth. Pragmatism would deny to the mind not only the power to comprehend the truth, but even to apprehend it. Its highest achievement, according to pragmatism, is the hypothesis [1] or the theory.

[1] "Principles are conventions and definitions in disguise. They are, however, deduced from experimental laws, and these laws have, so to speak, been erected into principles to which our mind attributes absolute value. * * * The fundamental propositions of geometry, for instance Euclid's postulate, are only conventions; and it is quite as unreasonable to ask if they be true or false as to ask if the metric system is true or false. Only these conventions are convenient. * * * Whether the ether exists or not matters little; let us leave that to the metaphysicians; what is essential for us is that everything happens as if it existed, and that this hypothesis is found to be suitable for the explanation of phenomena. After all, have we any other reason for believing in the existence of material objects? That, too, is only a convenient hypothesis." (H. Poincaré, quoted by Sir Bertram Windle, in *The Church and Science*, p. 57.)

Pragmatism maintains that all our scientific explanations and personal assents rest upon unverifiable hypotheses. The unverifiable hypothesis is a sufficient basis for the theory, not for science, since "science is knowledge * * * verified." (*Standard Dictionary.*)

Pragmatism, like every heresy, is the overemphasis of a truth. The truth is, that not every proposition which is called "scientific" is the expression of truth. The overemphasis consists in putting all scientific propositions on the same level, and denying that any one of them is the expression of truth. When the scientific proposition is securely based on facts, which have been connected with their causes, when the laws which govern those facts have been clearly ascertained, and the proposition itself has been embodied in a coherent system of propositions which are equally supported, that proposition enunciates a truth, a scientific truth.

Applying these observations to the case before us, we maintain that some of the propositions which we enunciate in the name of psychology express scientific truth. Other propositions, we willingly admit, express only probable inferences.

5. Another Definition of Science.—Some psychological phenomena, such as reaction time, are subject to measurement; but if psychology is to be interpreted as the "science of mind," science cannot be hedged about by the limitations of physical measurement. Nor need it be. In one of his "Lay Sermons" Huxley declared: "Science is, I believe, nothing but trained and organized common sense."[1]

Common sense signifies the mental power by which sane persons judge correctly concerning the ordinary affairs of life. As the fundamental element in science, it signifies that the mind, in arriving at scientific conclusions, accepts the same

[1] See *The Church and Science*, p. 4.

principles which it applies in the ordinary actions of life, and guards itself against error by the same sort of care which ensures the avoidance of error in its ordinary judgments.

Nearly every judgment assumes certain other judgments to be true. When a lady observes: "That is a beautiful hat," implicitly she expresses her belief in the existence of an external world. When she says to her son: "Please stop that noise," implicitly she expresses her belief that no effect is produced without the operation of an adequate efficient cause.

Science, as defined by Huxley, requires that in our scientific discussions we assume as true that entire system of metaphysics to which we give implicit adherence in our judgments concerning the ordinary affairs of life. Metaphysical principles are merely the abstract, universal principles which underlie all particular judgments. The particular judgments of common sense are based upon undeniable facts. These facts are interpreted in the light of metaphysical principles. Common sense thus arrives at a sane and correct interpretation of the ordinary facts of life.

The judgments of common sense become scientific judgments only when the mind that forms them is trained to observe accurately the facts of a particular order, to classify them, to perceive their relationships to one another, and to connect them with their causes.

Such judgments, formed by a mind so trained, if organized into a coherent whole, constitute science in the subjective sense. These organized

truths when set forth in books are denominated science in the objective sense.

6. **The Particular Science.**—Science may be universal or particular. Philosophy is universal science. Chemistry may be called a particular science.

Viewing the particular science in the objective sense, we may define it as a *systematized body of general truths concerning a definite subject-matter, and established by an efficient method.*

A. *A Systematized Body of General Truths.*—Science, considered objectively, must be the expression of known truth, since the fundamental notion expressed by the word science is knowledge of the truth.

In science the truths known must be general truths. There is no science of singulars. The truths enunciated by every science rise above the differences which are found in individual things and extend to all the objects of an entire class. Truths scientifically established are demonstrated truths. When these truths are so combined as to be properly co-ordinated or subordinated they constitute a systematized body of truths.

The truths of a particular science are differentiated from the truths of philosophy, which is universal science, by their relation to their causes. The particular science connects facts with their proximate causes; philosophy connects facts with their ultimate causes. Causes are divided into six classes: the material, formal, efficient, instrumental, exemplary, final. In general, we might say that a cause is anything that influences another thing either to exist at all, or to exist in a particular way.

The determinable element in a thing is called the material cause; the determining element is called the formal cause; the agent by whose activity the effect is produced is called the efficient cause; the means he employs are called the instrumental cause; the ideal according to which he fashions the object is the exemplary cause; the good which he purposes to secure is called the final cause.

A condition may be favorable or unfavorable to the action of the efficient cause, but it does not rank as a cause; neither does the occasion, which, though facilitating the act, does not enter into its production.

The philosophical demonstration of the existence of God carries us to the first cause of all things. But the atheist, who denies the existence of God, may be just as good a biologist as his neighbor who is a profound philosopher and devout Christian. Biology, as a science, requires the scientist to connect his facts only with their proximate, not with their ultimate, causes. The biologist who is an atheist can give as good a *scientific* explanation of a disease as can the biologist who is a Christian philosopher. In fact, if each has a truly scientific knowledge of the disease in question, the scientific exposition of both will be identical in effect. It is only when they pass beyond the bounds of the particular science and enter the field of philosophy or of religion that they will part company.

But to have even a scientific knowledge of a subject, which merely requires him to connect his facts with their proximate causes, the scientist must possess such knowledge of his subject as will enable him to answer the questions suggested

by the various causes: What is the thing that is affected? What is the affection? What agent produces the effect? What, if any, instrument does the agent employ? What purpose, if any, impels the agent to act? How is the action of the agent influenced by conditions and by occasions?

The scientist will be compelled to make many observations before he can answer these questions with certainty. He must ascertain his facts accurately, classify them properly, and confine his inference within the bounds which are determined by his observations. If he goes beyond those bounds he may be right, but he will not be presenting science. Relying upon his observations he may make a brilliant guess, and his brilliant guess may afterwards turn out to be the truth. But, while it remains merely a guess, it is not science. Galileo's inference that the sun is the center of our system was, at first, not much more than a brilliant guess. It is said to have been established as an incontrovertible fact by Bradley in 1726.

A scientific truth must in the first place be a truth. Then it must be a truth which shows so clearly the connection of a fact with its proximate causes that this connection can be regarded as established with certainty. Such truths only enter the body of systematized truths which characterize a science.

B. *A Definite Subject-Matter.*—Science, to be particular, must consider its subject under a particular aspect. By subject-matter we mean its formal object. Man is the material object of many sciences, the object with which they are

occupied. But each science considers man under a particular aspect. Anatomy studies his physical structure; physiology studies the functions of his organs; logic studies his mental processes in arriving at a correct inference. The particular aspect of the object upon which a science focuses its attention is the formal object of that science. It is the formal object which must be definite.

C. *An Efficient Method.*—Method is a way of reaching a given end by a series of acts which tend to secure it. Every science has its method, or methods, of ascertaining facts, of classifying them, and of testing the inferences based upon them. The value of one method can be determined by the way in which its results endure the tests to which they are subjected by the application of other methods.

7. Divisions to Be Treated.—Psychology, as we have seen, because of the many branches into which it is divided, is really a genus. It is necessary for us, therefore, to determine what branch, or branches, of psychology we propose to treat in this volume. It is our purpose to present to our readers a discussion of two branches of psychology, phenomenal and rational.

8. Phenomenal Psychology.—Like every science phenomenal psychology must possess a systematized body of general truths, a definite subject matter, and an efficient method.

A. *Truths.*—It is unnecessary to collect here the general truths established by phenomenal psychology, since they will be presented in their regular order in their proper place.

B. *Subject-Matter.*—The subject-matter of phenomenal psychology is mental phenomena considered in relation to their origin, classification and laws. A phenomenon is anything that appears; and, in relation to the mind, it signifies a mental fact. All mental acts are facts of the mind, mental phenomena. Phenomenal psychology aims to determine in detail what those mental facts are, how they originate, their relations to one another, and the laws by which they are governed.

C. *The Method.*—The method of phenomenal psychology involves two distinct processes: the observation of our own mental states by introspection; and the observation of the mental states of others, as those states are revealed by word and conduct.

The introspective process is called the *Subjective Method.* The observation of the mentality of other persons, as expressed by words and actions, is called the *Objective Method.*

I. *The Subjective Method.*—The introspective method involves self-consciousness, or reflex consciousness, as opposed merely to consciousness. To be conscious is to be aware of a mental fact.

We are said to be directly conscious when the mind concentrates its attention upon an object; we have reflex consciousness when we concentrate our attention upon our mental states.

A few moments ago I was listening to a group of boys singing a college song. While so occupied, a visitor came to my door, and, observing my attitude, and not perceiving the reason for it, inquired what I was doing. I told him I was listening to a college song, which he could hear, if he wished to listen.

Evidently I was conscious all this time of what my mind was doing. Yet, until the visitor entered my room, my attention was centered on the song, as I caught it. It was only when the visitor inquired, that I transferred my attention from the song, the object, to my thought of the object. During all the time I listened, I was conscious that I listened, but my consciousness was only direct. When I turned my attention from the object to my mental attitude towards the object, my consciousness became reflex, self-consciousness.

It is through self-consciousness that the mind exercises introspection. Metaphorically speaking, the mind, by introspection, looks inside itself, as the eye might look into a satchel. It examines its contents, its sensations, thoughts and volitions. It analyzes them, finds out in what they resemble one another, and in what they differ. By this analogy, of course, we do not wish to imply that sensations, thoughts and volitions are material objects like the articles in a satchel. We merely wish to illustrate the character of the mental operation which is signified by the term introspection—a looking within.

Mental facts are real facts, so real that their existence has never been denied. Idealists may deny the objective existence of bodies. They have never denied the existence of sensations, thoughts and volitions. Psychologists may differ in their analysis of these mental facts, designate them by different names, and ascribe their production to different powers. But about the existence of the facts themselves they never manifest the slightest doubt. It is the mental fact whose existence

is recognized by the mind as immediately evident, which is subjected to observation by the application of the subjective method.

The subconscious state of mind exists when the mind bestows so slight an amount of attention upon an act that it is hardly aware of its presence. Thus, before retiring to rest you begin to wind your watch, and you are surprised to discover that the watch has already been wound. Who wound it? There has been nobody in your room all the evening except yourself. But you have no recollection of having wound the watch. Yet, you must have done it. And, in winding your watch, your mind was so intent upon some other subject, that your act has left no impression upon your memory. If, while winding the watch, you were asked if you realized what you were doing, you would have replied in the affirmative. You were conscious of your act at the moment, directly conscious. But there was no reflex consciousness. The winding did not require much attention. Your attention was occupied with some other thought. One of the advantages of the habitual act is that it leaves the mind free to think of other things. Such acts are often spoken of as acts of the subconscious mind. But, as we shall see later, there is only one mind. It would, therefore, be more appropriate to speak of such acts as subconscious acts of the mind than as acts of the subconscious mind.

There are abnormal forms of consciousness which assume the hypnotic form, the form of multiple personality, etc., of which we shall have something to say later.

It is difficult for the victims of these abnormal

forms of consciousness to study them except by retrospection—looking backward, after recovery. Hence it is, that the normal forms of consciousness must be relied on to furnish the materials upon which the scientist will work in the application of the subjective method.

II. *The Objective Method.*—The *Objective Method* of phenomenal psychology consists in the study of mental acts as they manifest themselves externally through the words or actions of the thinker.

All the utterances of man, spoken or written, thrown out at random or embodied in permanent art, reveal the mental acts of the thinker, his type of mind, his mental attainments, his motives, his purposes. Especially do they reveal his mental reactions to external agents acting upon his mind. The individual can learn much about the operations and character of his mind by a study of consciousness. The objective method offers a test for the subjective. Moreover, it reveals aspects of mental life which the student who confines his study solely to consciousness will never discover. "Know thyself" was the Delphic motto. If we could carry out that command perfectly, we should be masters in psychology. We can carry it out, in a measure, by combining the use of the subjective and the objective method in phenomenal psychology.

9. Rational Psychology.—In a book entitled *Lessons in Psychology,* which was designed for use in normal and secondary schools, the author writes:

> "The books which define psychology as the science of the mind have not a word to say about

> that which feels and thinks and wills. They are entirely taken up with these thoughts and feelings and acts of the will—mental facts, in a word—trying to tell us what they are, and arrange them in classes, and tell us the circumstances or conditions under which they exist."[1]

The author here evidently has in mind only books on "scientific psychology," for there are other books that do treat professedly of "that which feels and thinks and wills." Even as it concerns "scientific psychology," this statement is not altogether correct. Not all "scientific" psychologists who have written books on their subject have refrained from writing about "that which" feels and thinks and wills. Many of them, it is true, declare that "that which" does not belong to their science. Yet, before they have reached the end of the book, they have forgotten the delimitations which they had set for their science, and are solving psychological problems on the assumption that they do know the "that which." Thus Professor Titchener, in his *Primer of Psychology*,[2] writes: "The objects of the science of the mind are the processes of the mind." Yet, when he discusses the freedom of the will he decides that the will cannot be free because a stream of processes cannot choose freely.[3] So he does know something about "that which," after all. He knows at least what it is not. And his argument against the freedom of the will is based upon the assumption that he knows positively what the mind is.

Apropos of just such lapses as this, William James writes, in the preface of his *Principles of Psychology:*

[1] Gordy, p. 34 [2] p. 7. [3] *Op. cit.*, p. 255.

> "Metaphysics, fragmentary, irresponsible, and half-awake, and unconscious that she is metaphysical, spoils two good things when she injects herself into a natural science."

We shall have something more to say about the attitude of James towards metaphysics in its bearing upon psychology, in the following Part. Meantime, we observe that he recognizes the existence of an attitude towards "that which" which is unconsciously metaphysical.

Rational psychology is consciously metaphysical. It aims to answer the question: "What is 'that which' feels and thinks and wills?" And, in giving its answer, it does not hesitate to enunciate the metaphysical principles which it employs to enable it to arrive at a solution of the problem.

If psychology is to be recognized as a science, it must include rational psychology. To be a science, psychology must trace mental facts to their cause. It is not necessary to trace them to the ultimate cause. But it is necessary to connect them with their proximate cause. It is not sufficient merely to catalogue facts and to establish the relation between them. Science demands all that, and more. Science demands not only that the relation between the facts be established, but also that their relation to their cause be ascertained. It is the special function of rational psychology to trace mental phenomena to their cause. So long as this special function is not exercised, the work done, though it may be very valuable, has not yielded that mental product which is deservedly called science.

The forms of mental activity are many, and specialists have done splendid work in discriminating between one mental state and another, and in showing their dependence upon bodily conditions, in correlating them, and in determining the laws by which they are governed. Each department of psychology may be considered a species, if only the explanations harmonize with the true interpretation of mind. It is not necessary for the psychologist dealing with a special department of mental activity to discuss the nature of mind. But it is necessary for him to make some assumption concerning the nature of the mind. The same assumption may be made in all the special branches of psychology. And since correct notions about the nature of the mind must be assumed by all the branches of psychology which are to be recognized as truly scientific, the assumed notions must be regarded as generic. It is rational psychology which supplies the generic notions required by every branch of psychology which is entitled to be called truly scientific.

In Part II, we shall attempt to establish our view of the nature of the mind, basing it upon the general character of mental phenomena, with which the student, from his preparatory studies, is already familiar. Having determined the nature of the mind in Part II, we shall explain, in Part III, as well as we can, how mental phenomena of the sensuous order are produced. And in Part IV, we shall explain the production of mental phenomena of the rational order, and their relation to sensuous phenomena.

PART II

RATIONAL PSYCHOLOGY

10. Function of Rational Psychology.—It is the duty of Rational Psychology to give an answer to the question: What is meant by mind? It will be the purpose of Part II to furnish an answer to that question. The answer ultimately must take the form of a definition.

In the *Century Dictionary* "mind" is defined as "that which feels and thinks and wills; the conscious subject."

Unless we understand what that is which feels and thinks and wills, what conscious subject is, we do not grasp the significance of "mind" as declared in this definition.

Our discussion of mind will show whether this definition can be accepted as fully satisfactory.

An allied word for which we require a definition is "mental."

If we look into the etymology of "mental," we find that it is derived from the Latin word *mens*, which signifies "intellect," or "reason." "Mental," therefore, if its etymology were kept in mind, should be restricted to signify something pertaining to intellect or reason. Use, however, has given it a wider meaning.

As understood today, "mental" is a term which is applied not only to acts of the intellect, but of the will also, and even to sensuous acts. In its application it is coextensive with "conscious."

In discussing the realities signified by these

words, we shall consider the answers which have been given to our question "What is meant by mind?" by various schools of thought. The choice of schools must be broad enough to enable us to consider all the various hypotheses which can be formed in relation to our subject. The schools which we shall consider are the Idealistic, the Empirical, the Double-Aspect, the Spiritualistic, if we adopt the names which are commonly employed to designate them. *Every answer that can be given to our question will ultimately resolve itself into the answer given by some one of these schools.*

The authors whom we select as representatives of these various schools must give answers to our question which are typical of the school to which they are assigned.

We shall select Berkeley and Fichte to represent the Idealistic; Professors Titchener and James to represent the Empirical; Dr. Bain and Herbert Spencer to represent the Double-Aspect; Descartes and St. Thomas to represent the Spiritualistic School. Each school is broad enough to include authors who, while agreeing with one another on certain fundamental views, are in utter disagreement on other views which may be no less fundamental.

11. (A). **Berkeley.**—Bishop Berkeley, (1685-1753) was not only a philosopher, he was a man of broad sympathies, of great charity and of eminent respectability. As an author he produced works which will be read as long as English literature endures.

In *The Principles of Human Knowledge* he gives us his answer to the question, "What is meant by mind?":

> *Part I, No. 2:* "But besides all that endless variety of ideas or objects of knowledge, there is likewise something which knows or perceives them, and exercises divers operations, as willing, imagining, remembering about them. This perceiving, active being is what I call *mind, spirit, soul,* or myself. By which words I do not denote any one of my ideas, but a thing entirely distinct from them, wherein they exist, or, which is the same thing, whereby they are perceived—for the existence of an idea consists in being perceived."

What is the relation of the objects perceived to this mind? His answer to this question is equally concise.

> *No. 3:* "For as to what is said of the absolute existence of unthinking things, without any relation to their being perceived, that is to me perfectly unintelligible. Their esse is percipi; nor is it possible that they should have any existence out of the minds or thinking things which perceived them."
>
> *No. 7:* "From what has been said it is evident that there is not any other substance than spirit, or that which perceives."

But if there be no external material world to

act upon our senses, whence come the ideas which are certainly in the mind? The Bishop answers:

> *No. 29:* "But whatever power I may have over my own thoughts, I find the ideas actually perceived by sense have not a like dependence upon my will. When in broad daylight I open my eyes it is not in my power to choose whether I shall see or no, or to determine what particular objects shall present themselves to my view; and so likewise as to the hearing and other senses, the ideas imprinted on them are not creatures of my own will. There is, therefore, some other Will or Spirit that produces them."
>
> *No. 33:* "The ideas imprinted on the senses by the Author of Nature are called *real things.*"

A few words here to illustrate Berkeley's meaning may not be out of place. "When in broad daylight I open my eyes"—Is there such a thing as broad daylight existing independently of the mind? No, "To be is to be perceived." Unless perceived by some mind there is no broad daylight. Broad daylight is merely an idea—using "idea" in the sense of Berkeley—imprinted on the sense of sight by the Author of Nature. Not only is daylight not perceived without this idea, but there is no material object whatever, existing outside the mind, which produces an impression upon the sense of sight, to which the sense of sight reacts by forming an idea of it. It is not to a material object existing independently of the mind, but to God, the Author of Nature, that the impression is to be attributed.

"When I open my eyes." Have I eyes, really? Yes, Berkeley would reply, you have an idea of eyes imprinted on your mind by the Author of

Nature. It is this idea which you call a "real thing." But what becomes of my eyes when I go to sleep? Do I still retain them? You do if you retain your idea of your eyes while you sleep. Your ideas of your eyes are the "real things." But I should have to remain awake to continue to think of my eyes. How can I think of my eyes while I sleep? Don't worry, the Author of Nature will, when you awake, once more imprint upon your mind the idea of your eyes. What then would a surgical operation on my eye mean? It would mean that the Author of Nature imprinted on your mind ideas of a surgeon, of surgical instruments, and all that goes with an operation. Then there would be no real operation? These ideas of the operation are the "real things." *The only substance that exists is spirit.* Would there be any pain connected with the operation? Only the idea of pain imprinted on the mind by the Author of Nature. Sensation, then, does not bring us into contact with a material substance existing independently of the mind? How about the house I bought yesterday? Does not that house exist independently of the mind? No. It exists, but only in the sense that there is an idea of it in some mind. In the same way the water at the bottom of the ocean exists if the Author of the Laws of Nature impresses an idea of it on somebody's senses, or if God Himself has an "idea" of it in His own mind—though how God can have an "idea," which is a sense impression, passes comprehension.

Criticism of Berkeley's Answer.—Berkeley's interpretation of mind converts what all men except

idealists regard as percepts of an external world, into ideas, caused by God, not by objects. His position is logical, if his fundamental principle is admitted, "To be is to be perceived."

But why should the application of this principle be restricted to bodies existing independently of the mind in an external world? Why should it not apply to spirit as well as to matter? This was Hume's difficulty. Hume, accordingly, reduced mind and God to ideas. What is mind according to Hume?

> "What we call mind," he writes, "is nothing but a heap or collection of different perceptions united together by certain relations, and supposed (though falsely) to be endowed with a perfect simplicity and identity."

And what are you and the rest of humanity?

> "Mankind are nothing but a bundle or collection of different perceptions which succeed each other with an inconceivable rapidity, and are in a perpetual flux or movement." [1]

Ward, in his article, "Psychology," in the *Encyclopedia Britannica*,[2] writes on this subject:

> "By idea Locke tells us he means whatsoever is the object of understanding when a man thinks (i.e., is conscious), and having, as it were, shut himself within such a circle of ideas, he finds himself powerless to explain his knowledge of a world that is independent of it; but he is able to give a very good account of some of the ideas themselves. He cannot justify his belief in the world of things whence certain of his simple ideas were conveyed, any more than Robinson Crusoe could have explored the continents whose products were drifted to his desert island, though he might perhaps survey the island itself well enough. Berkeley, accordingly, as

[1] Hume, Knight, *Blackwood's Philosophical Classics*, pp. 172, 175.

[2] ed. IX.

Professor Frazer happily puts it, abolished Locke's hypothetical outer circle."

Reason is impotent to demonstrate the truth which Berkeley denies. Reason can demonstrate that the earth is not flat—assuming that the earth exists. Reason cannot demonstrate the existence of the earth. If reason admits the existence of an external world at all, it can admit it only as an immediately evident fact. It cannot and need not demonstrate the existence of this world. It is a mistake to assume that the only convincing knowledge results from demonstration. We can demonstrate the existence of God. But is our knowledge of the existence of God, which results from demonstration, as perfect as the knowledge of God possessed by those who have an immediate intuition of God—assuming the existence of such beings?

By intuition we obtain immediate knowledge, by demonstration mediate knowledge. The only truth capable of demonstration, properly so called, is the truth which is not immediately evident. We have knowledge of the existence of the world by intuition. We do not possess, cannot acquire, and do not need, a knowledge of the existence of the world based upon demonstration.

The ten apostles who had seen the risen Master attempted to convince the absent member of the band of the truth of the fact of the Resurrection. He had mediate evidence of the most convincing kind before his mind. Yet he refused to believe. He feared the others were deluded. A single flash of immediate evidence brought Thomas to his knees, with the exclamation "My

Lord and my God!'' Here is an instance to illustrate the superior force of immediate evidence to produce conviction.

It is useless to attempt to ''demonstrate'' the absurdity of Berkeley's theory. If the absurdity of that theory is not immediately recognized as soon as his meaning is apprehended, no sort of argumentation will demonstrate it. We can indicate the absurdities to which the theory leads, and we can arrange our statements in the form of a syllogism. But such an argument is at best only an indirect demonstration. Out of syllogistic form, we have already illustrated these absurdities abundantly.

To put the case against Berkeley in a single sentence, we might ask why he wrote a book to establish his theory if he ever really assented to the judgment that there are no bodies actually existing outside the mind. If Berkeley's book, which was just now sent to us from the library, is an objective reality, then the main proposition which Berkeley attempted to establish in that book is false.

Berkeley's interpretation of mind and of matter go hand in hand. To admit one is to admit the other; to reject one is to reject the other. Though he does not use the term, Berkeley makes man out to be merely an angel, apart from contact with all objective reality except God. The mind of man is man. There is nothing to man except mind.

We who assent to the existence of a material world, of which each of us is a part, cannot admit the proposition that there is nothing to man ex-

cept mind. Whatever mind means, it does not mean what Berkeley tells us it means. Mind does not mean the whole man.

(B). Fichte.—Another form which Idealism has taken is the pantheistic. The pantheist recognizes only one substance, which he calls God, of which every seemingly distinct thing is only a mode. The modern originator of this theory was Spinoza (1632-1677). Spinoza's one substance was translated by Fichte (1762-1815) into the ideal order. There is no material world for Fichte, any more than for Berkeley. Berkeley makes each mind depend upon God for its impressions. Fichte makes each mind one with God —a mode in which the one infinite substance exists.

> "The absolute ego posits itself as the totality of all reality." [1]
>
> "The ego as absolute subject is that, the being whereof consists merely in positing itself as being." [2]
>
> "The ego posits originally its own being. In other words the ego is necessarily identity of subject and object; it is itself subject-object; and it is this without any further mediation." [3]

According to Berkeley's theory God would be fooling His creatures. According to Fichte's theory God would be fooling Himself. For each of us is firmly convinced that he is a distinct, finite substance, with a consciousness which is open to himself and closed to everybody else.

[1] *The Science of Knowledge* by J. G. Fichte, Kroeger, p. 281.
[2] p. 70.
[3] p. 72.

Yet each of us, in so far as he is anything at all, is that one infinite substance, if Idealistic Pantheism is true.

The same old question always comes up—Why should God deceive anybody, either His creatures or Himself? Before we can be required to admit the existence of anything, we must be shown that there is a sufficient reason for the admission.

Nearly everybody at some time becomes the victim of an illusion. But for all persons to be the victims of illusion during all their conscious moments, as well as in their dreams, and to be made the victims of illusion by God, who puts these images into their minds, is a condition which passes belief. God should be able to find a more worthy occupation than that of constantly deceiving His creatures or Himself. Would it not be a simpler matter for God to create a real world and be done with it, instead of producing countless illusions in countless minds, or in His own mind? Idealism, whether as presented by Berkeley or by Fichte, lacks for its recognition the compelling force of sufficient reason. Whatever the mind is, it is certainly not an immaterial substance out of all contact with matter.

12 (A). **Professor Titchener's Answer.**—Professor Titchener makes the assumption that the mind is a sum of processes. To illustrate the reasonableness of this assumption he institutes a comparison between the mind and the chair.[1] We talk of a chair as if it had arms, legs and a back. But it is incorrect, he tells us, to speak of a chair in this manner. We should say that the chair "is" all these things, rather than that it "has" them. And just as the chair is the sum of its parts, so is the mind the sum of its processes. "It is precisely the same with mind" and chair. "The objects of the science of the mind are the processes of the mind."

We do not wish to quarrel with Professor Titchener for attempting to illustrate mind by matter. We recognize that if he is to implant in the mind of his reader a phantasm which will parallel the concept he wishes to evoke he must resort to matter. But he should make sure of his parallel; he should institute a comparison between one sum of processes and another, if he is going to define mind as a sum of processes. He certainly does maintain that the mind is a sum of processes. Unless he also regards the chair as a sum of processes, how can he say that "it is precisely the same with the mind" and the chair? Since we do not regard the chair as a sum of processes, we are not convinced by his illustration that the mind is merely a sum of processes.

[1] *Primer of Psychology*, p. 6.

Professor Titchener's definition is one of the recognized definitions of mind. His is the first of the definitions enumerated by Ward, in the article from which we quoted above:[1]

> "The individual mind may mean either (I) the series of feelings or mental phenomena above referred to; or (II) the subject of those feelings for which they are phenomena; or (III) the subject of those feelings or phenomena plus the series of feelings or phenomena themselves, the two being in that relation to each other in which alone the one is subject and the other a series of feelings, phenomena or objects. It is in this last sense that mind is used in empirical psychology, its exclusive use in the first sense being favored only by those who shrink from the speculative associations connected with its exclusive use in the second."

If the empirical psychologist presumes to infer the powers of the mind from his definition of mind, he is assuming the rôle of rational psychologist. To sustain the part he has assumed, he must justify his definition of mind by tracing the phenomena of mind to their causes, and by a competent analysis of the character of the causes.

When, therefore, Professor Titchener rejects the notion of free will because of his "scientific definition of mind," he is playing the part of rational psychologist. But he has not established his right to assume this rôle. His "scientific" definition of mind as a "sum of processes" compels him to confine his discussion to processes, and the sum of processes. He cannot, consistently with his definition, discuss the subject

[1] *Ency. Br., ed.* IX, "Psychology."

which undergoes change. The changes are the things he must discuss, not the subject of the changes. We have no objection to the discussion of the subject of mental states. But the subject must not be permitted to be smuggled into the discussion, and afterwards allowed to enjoy all the rights that flow from legitimate entry.

(B). The Answer of William James.—William James, late professor of philosophy at Harvard University, in his *Principles of Psychology*[1] nowhere gives us a formal definition of mind. But he does give us his definition of Psychology, and, in the development of his system, he discusses the elements which would enter into his definition of mind, if he formulated such a definition.

> On *page 1, vol. I,* he writes: "Psychology is the science of mental life, both of its phenomena and their conditions."
>
> *Preface, p. vi:* "Psychology, the science of finite individual minds, assumes as its data (1) thoughts and feelings, and (2) a physical world in time and space with which they coexist and which (3) they know."

Again:

> "this book, assuming that thoughts and feelings exist and are vehicles of knowledge, thereupon contends that Psychology, when she has ascertained the empirical correlation of the various sorts of thought or feeling with definite conditions of the brain, can go no farther—can go no farther, that is, as a natural science. If she goes farther she becomes metaphysical. * * * This book consequently rejects both the associationist and the spiritualist theories.

[1] Henry Holt and Co.

* * * Metaphysics, fragmentary, irresponsible, and half awake, and unconscious that she is metaphysical, spoils two good things when she injects herself into a natural science."

Page 344: "It (the soul) is at all events needless for expressing the actual subjective phenomena of consciousness as they appear. We have formulated them all without its aid, by the supposition of a stream of thoughts, each substantially different from the rest, but cognitive of the rest, and appropriative of each other's content."

Page 345: "But when we take the two formulations, first of a brain to whose processes pulses of thought simply correspond, and second, of one to whose processes pulses of thought in a soul correspond, and compare them together, we see that at bottom the second formulation is only a more roundabout way than the first of expressing the same bald fact. That bald fact is that when the brain acts, a thought occurs. The spiritualistic formulation says that the brain processes knock the thought, so to speak, out of a soul which stands there to receive its influence. The simpler formulation says that the thought simply comes."

Page 346: "To the other arguments which prove the need of a soul, we may also turn a deaf ear. The argument from free will can convince only those who believe in free will."

Page 347: "Altogether, the soul is an outbirth of that sort of philosophizing whose great maxim, according to Dr. Hodgson, is: 'Whatever you are totally ignorant of, assert to be the explanation of everything else.' "

Page 348: "The soul theory is, then, a complete superfluity, so far as accounting for the actually verified facts of conscious experience goes."

Page 348: "The soul, however, when closely scrutinized guarantees no immortality of a sort we care for.

"We believe ourselves immortal because we believe ourselves fit for immortality. A substance

ought surely to perish, we think, if not worthy to survive, and an insubstantial stream to prolong itself, provided it be worthy, if the nature of things is organized in the rational way in which we trust it is."

Page 349: "A second alleged necessity for a soul-substance is our forensic responsibility before God. * * * To modern readers, however, who are less insatiate for retribution than their grandfathers, this argument will hardly be as convincing as it seems once to have been."

Page 350: "My final conclusion, then, about the substantial soul is that it explains nothing and guarantees nothing."

Page 401: "If the passing thought be the directly verifiable existent which no school has hitherto doubted it to be, then the thought itself is the thinker."

Page 197: "The mental state is aware of itself only from within; it grasps what we call its own content and nothing more. The psychologist, on the contrary, is aware of it from without, and knows its relations to all sorts of other things. What the thought sees is only its own object; what the psychologist sees is the thought's object, plus the thought itself, plus possibly all the rest of the world."

This long line of quotations from James is necessary to enable the reader to see the real answer which he gives to our question. He tells us at the very beginning that he is not going to be metaphysical and that "this book, consequently, rejects both the associationist and the spiritualist theories." This is a good deal like saying: "I am going to cut out your appendix, but I am not going to use a cutter in the operation."

It is as easy to cut the appendix out of a man without a knife as to cut the psyche out of psychology without metaphysics. It requires as much metaphysics to get the psyche out of psychology as to get it into it.

How does he get the psyche out of psychology? He gives us the alternatives: brain action to which pulses of thought simply correspond, and brain action to which pulses of thought in a soul correspond. The second is, he tells us, merely "a more roundabout way than the first of expressing the same bald fact * * * that when the brain acts, a thought occurs."[1]

The difference, which to James appears so slight, is the difference between an effect which is produced by an adequate efficient cause, and an effect without any efficient cause. The answer of James is the sort of answer which the child gives to its mother when she asks, "Who spilled the milk?" "The milk just flowed out," says the child. It is true enough that the milk just flowed

[1] "The Unity into which the Thought * * * as I shall for a time proceed to call, with a capital T, the *present mental state* * * *." (p. 338.)

"We ought to have some general term by which to designate all states of consciousness * * *." (p. 185.)

"My own partiality is for either feeling or thought. I shall probably often use both words in a wider sense than usual * * *." (p. 186.) From these words, and from the context, it appears that James attributed to the brain the same relationship to percept and concept.

When we employ the word "thought" in this book, we use it to denote an apprehensive act of supra-sensuous character.

out; but who overturned the pitcher? It is true enough that the thought just "occurs"; but what makes it occur? What is the efficient cause of the thought? To assert that you can have an effect without any adequate efficient cause is to assert a proposition which concerns metaphysics very deeply.

To make such an assertion is to enunciate a proposition which at once involves him in conflict with metaphysics. It is itself a sort of metaphysical proposition, but the sort which is commonly rejected. No, James did not keep out of metaphysics. He plunged into it, head over heels, and no one can object if we subject his metaphysics to a close scrutiny.

"Pulses of thought" is, of course, only a metaphor; but this very metaphor suggests the reply to his argument. When you can have a pulse of any sort which is not a pulse of some thing, it will be time to talk of a pulse of thought without anything pulsating thought. Pulses of electricity issue from the dynamo, and are the product of the dynamo; pulses of light issue from the sun, the star, the planet, the lamp, and are products of the activity of that from which they pulsate. Thought is a pulse, according to James. The brain is not the dynamo which produces this pulse. The thought which James recognizes is a pulse which differs from light as a pulse, and from electricity as a pulse. It is a pulse which issues from no pulsating thing. Of course if he were to maintain that the brain produces the pulse of thought he would have an efficient cause of a sort. He does not claim that it is a brain product. It

simply "occurs," as the milk in the nursery "flows." No thing has done any thing. Some thing simply "occurs." This is a species of metaphysics. It is the sort of metaphysics which should be avoided rather than cultivated.

Yet on the strength of such metaphysics he rules the soul out of existence. It is "needless," a "superfluity," "explains nothing."

Why, one of the functions of the soul is to serve as the dynamo in producing the pulse of thought; and, until some adequate substitute has been found, James is not justified in declaring: "The soul theory, then, is a complete superfluity so far as accounting for the actually verified facts of conscious experience goes." When I press the electric button a light occurs. Does it therefore follow that the dynamo is superfluous? The soul for the production of thought is neither more nor less superfluous than the dynamo for the production of electricity.

James has accounted "for the actually verified facts of conscious experience" by the aid of the metaphysics of the nursery—"when the brain acts, a thought occurs."

The soul theory, which James discards with so much ease, is deserving of reverence for its age, if for nothing else; and if it is to be discarded, its rejection should be justified by arguments that will endure analysis.

We are puzzled how to understand his notion of mind. He tells us "the thought is the thinker"; yet "what the psychologist sees is the thought's object, plus the thought itself, plus possibly all the rest of the world."

If the thought is the thinker, we cannot help wondering what the psychologist is. It would seem as if the thought of the psychologist should be the psychologist himself. Yet we find that the "psychologist" is something greater than the "thinker," some one who knows more than the "thought." What can the "psychologist" be?

13. **Dr. Bain's Answer.**—Dr. Alexander Bain's (1818-1903) view of mind is set forth briefly in *Mental Science:*[1]

> "But as object-experience is also in a sense mental, the only account of mind strictly admissible in scientific psychology consists in specifying three properties or functions—feeling, will or volition, and thought or intellect, through which all our experience, as well objective as subjective, is built up. This positive enumeration is what must stand for a definition."

> *Page 4:* "The brain is the principal, although not the sole, organ of the mind; and its leading functions are mental."

His proofs follow which show how the mind is affected by brain changes.

> *Page 10:* "The functions of the hemispheres of the brain, including the enclosed ganglia, comprehend all, or nearly all, that is comprised in mind."

Herbert Spencer's Answer.—Herbert Spencer's (1820-1903) view of mind is set forth in his *Principles of Psychology.*[2]

> "Though accumulated observations and experiments have led us by a very indirect series of inferences to the belief that mind and nervous action are subjective and objective faces of the same thing, we remain utterly incapable of seeing, and even of imagining, how the two are related."

There does not appear to be any substantial difference between these two definitions of mind. They both express the view which is known in

[1] p. 2.
[2] vol. I, p. 140.

psychology as the "Double-Aspect Theory," or "Psycho-physical Parallelism."

Mental acts have a cause, according to this theory, and it is always the same cause, brain or nervous activity.

Criticism of the Answer of Bain and Spencer.—Mind, according to these philosophers, is a "property," "function," "aspect" of brain or nervous activity.

They emphasize a fact to which experience testifies, that our mental life is conditioned, at least in a measure, by the activity of the brain and the other parts of the nervous system. But they overemphasize the contribution of the body to mental products. They attribute all mental products to bodily activity. They do not appear to recognize any spiritual element in man. In this view they are at the opposite pole from Berkeley, who claimed that man, in so far as he is a substance, is all spirit.

And yet Dr. Bain[1] adheres to the language of Berkeley:

> "The prevailing doctrine is that a tree is something in itself apart from all perception; that by its luminous emanations it impresses our mind and is then perceived; the perception being an effect, and the unperceived tree the cause. But the tree is known only through perception; what it may be, anterior to, or independent of, perception, we cannot tell; we can think of it as perceived but not as unperceived."

While the phrases remind us of Berkeley, yet the underlying thought is quite different. He does not deny that the tree exists "anterior to, or

[1] *Mental Science,* p. 198.

independent of, perception." What he denies is that we know anything about it apart from perception. In other words we cannot know that the tree exists without knowing that it exists—a proposition in which we heartily concur. That Dr. Bain recognizes the actual existence of material objects is shown in the following passage:

> "Roughness and smoothness are referable, in the first instance, to the sense of the plurality of points. The finger resting on the face of a brush gives the feeling of the plurality of pricks, and we can judge whether these are few and scattered, or whether they are numerous and close, up to the point where they become too close for the sensibility of the part. We can thus discriminate between a close pile and a finer one."[1]

Sensation he defines as "the mental impression, feeling or conscious state resulting from the action of external things on some parts of the body, called on that account sensitive."[2]

We have universal words but no universal concepts:

> "The only generality possessing separate existence is the name; and the proper force of a general name is to signify agreement among the concrete things denoted by it."[3]
>
> "General ideas, separated from particulars, have no counterpart in reality (as implied in realism) and no mental existence (as affirmed in conceptualism).
>
> "Neither can we have even a mental conception of any property abstracted from all others; we cannot conceive a circle, except of some color

[1] *Ibid.*, pp. 47, 48.
[2] *Ibid.*, p. 27.
[3] *Ibid.*, p. 179.

and some size; we cannot conceive justice except by thinking of just actions."[1]

Herbert Spencer apparently recognizes universal concepts, but attributes them to mental evolution, which he describes in the following passage from the *Principles of Psychology:*[2]

> "As said in No. 253, 'Mental evolution, both intellectual and emotional, may be measured by the degree of remoteness from primitive reflex action.' In reflex action, which is the action of nervous structures that effect few, simple and often-repeated co-ordinations, the sequent nervous state follows irresistibly the antecedent nervous state; and does this not only for the reason that the discharge follows a perfectly-permeable channel, but also for the reason that no alternative exists. From this stage, in which the psychical life is automatically restrained within the narrowest limits, up through higher stages in which increasing nervous complexities give increasing varieties of actions and possibilities of new combinations, the process continues the same; and it continues the same as we advance from the savage to the civilized man."
>
> *Page 525:* "If we glance over the series of contrasted modes of thinking which civilization presents, beginning with the savage who, seized by the fancy that something is a charm or an omen, thereafter continues firmly fixed in that belief, and ending with the man of science whose convictions, firm where he is conscious of long accumulated evidence having no exception, are plastic where the evidence though abundant is not yet overwhelming, we see how an increase in freedom of thought goes along with that higher representativeness accompanying higher mental evolution."

The only mental power recognized by either Bain or Spencer is an organic power. Neither

[1] *Ibid.*
[2] vol. II, p. 524.

recognizes in the mind any power intrinsically superior to the power of the organism. That the organism is capable of acts of sensation is evident enough. No one maintains that there is in the brute any mental power intrinsically independent of the organism. Yet the brute is evidently capable of sensation. But the brute gives no evidence of abstract thought. If the mental power of man, like the mental power of the brute, is confined within the limitations of the organic, why should man possess the power of abstract thought if the brute does not? Dr. Bain can see no evidence of the existence of such a power and, consequently, denies that any such power exists. According to Dr. Bain we have no abstract, general concepts; we have merely general names. Herbert Spencer, recognizing, like Dr. Bain, that mind is a totally organic power, yet recognizes the existence of abstract concepts.

Which of the two philosophers has the more correct view of our mental phenomena? Have we, or have we not, general concepts? Are our words only universal, and our thoughts particular?

Herbert Spencer writes:[1]

> "From the most complex and most *abstract inferences* down to the most rudimentary intuitions, all intelligence proceeds by the establishment of *relations of likeness and unlikeness.*
>
> "With some object or action remembered as exemplifying an attribute or relation, there is joined the consciousness of a heterogeneous assemblage throughout which it also occurs: the result being that this attribute or relation tends to be dissociated

[1] *Principles of Psychology,* vol. II, p. 281.

in consciousness from each member of the assemblage. Such conceptions of one degree of abstractness having become familiar, there arises the possibility of re-abstraction—the possibility of recognizing more-abstract truths common to many of these less-abstract truths. Each further step of this kind, which, as we see, implies a higher degree of representation and re-presentation, is a further emancipation from the primordial concreteness of consciousness. The terms of thought are no longer particular things and particular acts performed by them; but there *are more and more distinctly conceived the general characters of things and classes of things, considered apart from the things themselves;* and there are more and more distinctly conceived the general forces displayed, considered apart from the particular actions."[1]

Certainly Herbert Spencer is right with regard to the universality of our concepts. We have not only general names, but general concepts. When we affirm that the sum of the three angles of a triangle is equal to two right angles, we have in mind not any particular triangle, but something common to all triangles. The mind perceives that all triangles are alike in this. The likeness of all triangles in respect to the sum of their three angles is what the mind perceives and affirms mentally, and what the lips utter orally in this proposition.

Dr. Bain, however, concedes universality only to the name. And what drives the Doctor to this conclusion? Evidently the fact that abstraction is beyond the capacity of an organic power. The sensuous representation is always particular. In this conclusion he is supported by experience and analogy. Consciousness testifies that sense per-

[1] *Ibid.* p. 526.

ceptions are always concerned with individual facts. The mentality of the brute, as revealed by its actions, furnishes no evidence that it possesses any general concepts. Yet it has sense organs like ours, which respond to impressions as our organs do.

It appears, then, that Dr. Bain has sacrificed facts for logic, and Herbert Spencer has sacrificed logic for facts. Both start with the same assumption, that all our mental powers are intrinsically associated with the organism. "Therefore," argues Dr. Bain, "we can have no general concepts." "Nevertheless," argues Mr. Spencer, "we have general concepts."

It is clear that Dr. Bain is right on logic, and Mr. Spencer is right on facts.

And since the facts will not fit in with the original assumption, it is evident that the original assumption must be rejected.

It is here that our metaphysics comes into play. Metaphysics teaches us that nothing can begin to be without an adequate efficient cause. Mr. Spencer knows that the facts do exist—that the phenomena of general concepts come into being. Dr. Bain knows that the phenomena of abstract concepts cannot be produced by sensuous powers.

We infer, therefore, that there must be in the mind some power superior to sense, some power equal to the task of producing our general concepts.

Though we call this a metaphysical argument, it is nothing but the ordinary argument which we employ every day in our discussions. You can't sink a battleship by discharging a pop-gun at it.

The cause must be proportioned to the effect. When shells began to fall in Paris during the World War, military men at once tried to locate the gun from which the shells came. After careful investigation they arrived at the conclusion that the gun was seventy miles away. They inferred, therefore, and correctly, that the Germans possessed a gun which could send a shell seventy miles. Later investigations verified the correctness of the inference.

The law of efficient causality is universal. It obtains no less in the phenomena of mind than in the phenomena of war.

The conclusion to which it points here is that, since the sensuous powers of the mind are unequal to the task of producing general concepts, there must be in the mind some supra-sensuous power capable of producing them—for general concepts are established facts.

We have seen thus far that mind cannot be spirit apart from all contact with matter, depending for its ideas upon impressions made upon it by the Author of Nature. Nor can it be body alone, whether considered as exercising a particular function or as having a particular aspect.

We must, therefore, recognize the fact that both body and soul somehow combine to produce the conscious states which we experience.

But what is body, and what is soul? And what is the relation of body and soul to states of consciousness? Two philosophers who recognize the existence of both body and soul, and attribute to soul alone all, or some, of the phenomena of consciousness, are Descartes and St. Thomas.

14 (A). Descartes.—Several extracts from the writings of Descartes will be required to set his answer clearly before the reader.[1]

"But, observing that the principle by which we are nourished is totally different from that by which we think, I have said that the word 'soul,' when applied to both, is an equivocal term; and that if it is employed expressly to signify the *actus primus,* or the principal form of man, it must be so understood that its application will be restricted to the principle by which we think; and I have regularly called it by the name 'mind' to avoid equivocation; for I consider the mind to be not a part of the soul, but as the whole soul which thinks."[2]

"By the word 'thought' (*cogitatio*) I understand all those things which are done in us while conscious, in so far as there is a consciousness of them in us. And thus, not only understanding, willing, imagining, but also feeling, are here the same as thought."[3]

"But when it is rightly understood how they differ (the brute life and the human) the reasons are much more firmly grasped which prove that our soul is of such a nature as to be fully independent of the body; and therefore it is not necessary that it should die with it; and, finally, since no causes are observed which are capable of destroying it, we are by nature impelled to assent to the judgment that it is immortal."[4]

[1] The translations from Descartes have been made by the author from the original text.

[2] Responsiones Quintæ, de iis quæ in secundam meditationem objecta sunt. n. 4.

[3] Principiorum Philosophiæ Pars Prima, IX.

[4] De Methodo, V.

> "That, therefore, we may avoid this error, let us consider that death is never due to the fault of the soul, but simply to the fact that some one of the principal parts of the body has been broken up; and let us realize that the body of a living man differs from a corpse only as a clock, or other instrument that works automatically when it is in good order and has within itself the bodily principle of the movements on account of which it was constructed, together with everything else which is required for its activity, differs from the same clock, or any other machine, when it is broken up, and the principle of its activity ceases to operate." [1]

Among the theories of Descartes was one known as the "Theory of Animal Spirits." According to Descartes the particles of blood which penetrate to the brain, not only nourish the brain, but also produce a certain sort of flame, active and pure. These "animal spirits," as they are called, enter into the cavities of the brain, then into its pores, and from the pores into the nerves. The soul and the "animal spirits" come into contact with each other in the pineal gland. It is by means of the power given by the "animal spirits" that the will is able to control the movements of the muscles.

Criticism of Descartes.—Descartes, as the passage from *De Passionibus,* VI, clearly reveals, regarded the body as a machine. The extract from the last paragraph in the "Discourse on Method," Part V, shows that he regarded the soul as a spiritual substance. Under "thought" he included all the acts of consciousness, sensuous and rational. The attribution of all states of consciousness to the

[1] De Passionibus, VI.

soul alone was inevitable after he had adopted the assumption that the body is a mere machine.

That Descartes' followers acted up to the theory of their master appears to be established by the following quotation from Mahaffy:[1]

> "(They) kicked about their dogs and dissected their cats without mercy, laughing at any compassion for them, and calling their screams the noise of breaking machinery."

In our discussion of Descartes' answer we shall concentrate our attention upon two considerations: I. Is the body of man a mere machine, or a living thing? II. Is sensation an act of the soul alone?

I. In nature we observe a variety of bodies. There are today in the western parts of the United States immense tracts of fertile land which were once arid deserts.

Those lands were irrigated, seeds were planted in them, grasses and vegetables sprang up. Cattle were introduced which drank the water carried by the canals, and ate the grass that grew in the fields. Men drank the water, ate the vegetables which sprang from the seeds they had planted, killed their cattle and ate the flesh, according to their needs.

Evidently there is a common element in all these bodies. There is something common to the desert sands, to the grasses and vegetables, to the cattle, and to man. Yet there is a clear line of demarcation between the sand and the other bodies; a clear line of demarcation too, between the grasses and vegetables, the cattle and man.

[1] *Descartes*, p. 181.

Here we may concentrate on the differences between the grains of sand and the other bodies.

The grains of sand, for aught we know, may have existed unchanged for countless ages. The other bodies originated in recent times; and they all began their existence in the same way—each as a single cell. That single cell divided into two, the two into four, the four into eight, and the process continued until the completed body was developed. Why did one cell develop into a blade of grass, another into a cabbage, a third into a cow, and a fourth into a man? There is something common to the sand and to the other bodies. What is there in those other bodies that makes them different from heaps of sand or compounds of sand and water? Out of the original cell develop all the parts of these bodies. Bone and tissue, heart and liver, lungs and brain, in beast and man, all develop out of the original cell.

No one doubts that a machine is composed of mere matter. Cell activity is altogether different from the activity of mere matter, howsoever the parts of matter be arranged. No machine can, of its own initiative, construct a multitude of other machines, some of which are like itself, some totally unlike itself. Yet that is precisely what is done by the original cells from which the bodies of beast and man are developed. The cell reproduces itself in the body, and the body reproduces itself by means of the cell. If injured, the body, by cell activity, repairs the injury. Can a mere machine reproduce itself of its own initiative? Can it repair an injury to itself of its own initiative? How long would you have to remain on the

road, waiting for an automobile tire to heal after a blow-out?

Will an automobile fight back if you strike it with a hammer? Will it run away if hit by a stone? The automobile, as we know, will not move, unless set in motion by something outside itself. The body of beast, or man, will move of its own initiative. The automobile takes in gasoline, oil, air and water; but it does not assimilate them; it does not convert them into its own substance. The bodies of beast and man take in food, assimilate some elements, and cast out other elements. Beast and man, after having lived a longer, or a shorter period, die. While the body lives, the chemical forces of matter are its servants. When it dies, the chemical forces of matter regain their independence. The czardom of life is replaced by the anarchy of the atoms.

There is, therefore, in the blade of grass, in the bodies of beast and of man, some element which separates them by an impassable gulf from the matter of which the mere machine is composed.[1]

We must conclude, therefore, that Descartes' representation of the body of man as a mere machine is a misrepresentation of it.

II. Now, for the second question:

Is sensation an act of the soul alone?

It must be observed that Descartes was logically forced to adopt the view that sensation is an act of the soul alone, since he had assumed that the body is a mere machine. Sensation is evidently a vital act. Descartes recognized this

[1] See *The Church and Science*, by Sir Bertram Windle, cc. 25-30

fact. And, as he refused to recognize in man any vital principle as a constituent of the body, he was necessitated to ascribe sensation to the soul alone.

Is sensation an act of the soul alone? We must remember that the question at issue here is not whether a vital principle is required for sensation—which Descartes acknowledged—but whether that vital principle, in producing sensation, is the subject which elicits the act of sensation. In other words, does the soul alone feel, or does the body feel?

Descartes denied that brute animals experience sensation, because sensation is an act of the soul, in which matter does not participate, and because he maintained that the body of the brute is a mere machine. On the assumption that sensation is an act of the soul alone, in which matter does not participate, Descartes was undoubtedly logical in denying sensation to the brute. Descartes was certain that the brute does not possess a spiritual soul, which was the only sort of soul he recognized. The brute was, in his opinion, merely a machine, a very curious machine indeed, but, nevertheless, merely a machine.

Let us see how far we can agree with Descartes.

We agree with him that brute animals do not possess intelligence. Our argument concerning the nature of their mental powers is necessarily an argument from analogy. It is evident that no mere examination of our own consciousness can make known to us the nature of the mind of the brute. We can apply to this problem only the objective method. And in applying the objective method the only criterion available is that which

we obtain by studying an animal which is admittedly intelligent—man.

Man so uses the materials which nature puts at his disposal that he is constantly making progress. The telephone, the telegraph, the automobile, the electric car, ships in the air, on the sea, and under the sea, all are so many evidences of man's progress in bringing the forces of nature under his control.

In contrast with man, the brute is stationary. So far as we can ascertain, the brute of today has the same power over nature that his ancestors had—neither more nor less. He has no inventions to his credit. The animal kingdom today has inherited no body of scientific truth from its ancestors.

If capability of progress is the test of intelligence we are forced to infer that the brute does not possess it.

Again, we agree with Descartes that we ourselves experience sensation. The fact that we attend the moving picture theater is evidence that we experience the sensation of sight. Evidences from our conduct for all the other sorts of sensation might easily be accumulated. Not one of these facts would Descartes deny; but he would attribute our sensations to the soul alone. Just what power experiences sensation is not a matter that concerns us at the present moment. *What does concern us is that the facts of sensation exist, and that we manifest our sensations by our conduct. Conduct is the criterion which we wish to apply to determine whether or not sensation exists.*

Taking conduct as a criterion of the presence of a sensation, we ought to be willing to concede that every being whose conduct corresponds to the conduct of man while experiencing a sensation, likewise experiences sensation. This principle cannot possibly cause confusion. In fact, it is on this very principle that we humans recognize one another as sentient beings.

Applying this criterion to brute animals, we are forced to acknowledge that they are sentient beings. Their conduct is similar to ours when we experience sensations. They respond to a call, thus giving evidence that they hear. They run to their master when he approaches, thus giving evidence that they see. If the conduct of human beings, under the influence of sensation, is a criterion of the presence of sensation, then we must say that brute animals experience sensation, and therefore that sensation is not an act of the spiritual soul alone.

Besides this psychological argument, there is the physiological argument which enforces the same conclusion. We may not agree with everything evolutionists have to say, but we must acknowledge that evolution, in its attempt to demonstrate the essential similarity of man and brute, has succeeded in bringing to light a multitude of facts which do reveal a marvelous similarity in the bodily structure of man and beast. Descartes, however, could afford to admit this similarity without surrendering his position, because he denied sensation equally to the bodies of man and brute.

But physiology carries the argument beyond structure to function. The organs of man and beast function alike.

Descartes would agree, yet would deny that sensuous consciousness is produced by the action of the organ. The action of the organ might be a condition *sine qua non* for sensation, yet not produce sensation. Well, whatever purpose the organ serves in man, it serves in the brute; and if it serves to produce sensation in the brute, it serves to produce sensation in man.

Descartes admits sensation in man. One human being infers that another is sentient, from his conduct. *Accepting conduct as a criterion, we must admit that the brute is sentient. The only powers possessed by the brute are organic powers. Sensation must, therefore, be the product of an organic power.* Similarity in structure and in function, of the organs of man and beast, shows how the body of man can be, if the body of the brute must be, capable of producing sensuous acts. And if the body of man is capable of sensation, sensation is not an act of the soul alone, as Descartes taught.

Descartes has a measure of strength and of weakness which balances the strength and the weakness of the Double-Aspect School.

Descartes knows that a spiritual soul is required for abstract thought. They know that sensation is a product of organic activity.

Descartes reduces the body to the level of a mere machine. They reduce the soul to the condition of a function or an aspect of the organism. To secure the entire truth it is necessary to combine the sound elements in both systems.

Consequences of Descartes' Philosophy.—René Descartes (1596-1650) was educated at the Jesuit College of La Flèche, in France. By his teachers he was introduced to the Scholastic Philosophy, which was then, and still is, the philosophy which is taught in Jesuit colleges. After completing his college course, Descartes became a volunteer soldier for the purpose of becoming better acquainted with men and manners. His soldiering did not compel him to abandon his intellectual pursuits. On the contrary it afforded him more leisure than he should have enjoyed had he remained shut up in a city in the company of his friends. It was while in the enjoyment of this leisure that he evolved his philosophic system, his Analytical Geometry, and his various scientific theories.

He began his philosophic system with doubt. He called in question one fact after another until he came to a fact which he could not doubt: "I think." His recognition of the fact of his thinking involved the recognition of the fact of his existence. Hence his formula: "*Cogito: ergo sum.*"—"I think: therefore I am." But why admit this fact and this inference? Because he had a clear and distinct idea of the truth expressed. He now has a criterion by which he can measure the truth of a proposition—his clear and distinct idea. Applying this criterion he finds that he must recognize the existence of his own soul, of God, of the reliability of his senses, and the fact of the external world. So far as the existence of these various objects was concerned, he was at one with his old professors. His method

of arriving at these conclusions, however, differed from that of his professors, who insisted on measuring the amount of truth in *an idea by its conformity with its object,* while he measured the *truth of the object by its conformity with his idea.*

There was one proposition in particular concerning which he and his old professors were diametrically opposed to each other. While both admitted the existence of the human soul, the professors regarded the soul as the active principle of all life in the body; Descartes, on the contrary, regarded the soul as a spirit locally conjoined to the body, but forming no part of it, the body being a mere machine.

The influence of Descartes upon philosophic thought since his day is thus described by Francis Bowen, in *Modern Philosophy:*[1]

> "Cartesianism is the proper origin and starting point of all modern philosophy, both because it first erected the standard of independence of the authority of all former times and thinkers, and because these two primary data of Descartes have been borrowed from him by all subsequent system-makers to serve as the foundation stones of their own doctrines."

Descartes not only erected the standard of independence of "all former times and thinkers," but likewise emancipated himself from the authority of objective evidence. He set up a subjective criterion of truth—the clear and distinct idea—in place of the objective truth which is the Aristotelian standard.

[1] p. 26.

How did it come to pass that a sound standard of truth could be rejected to favor one which is unsound?

To answer this question it is necessary to give a brief sketch of the position of scholastic philosophy in the era in which Descartes lived. The sketch is taken from *Mind,* a quarterly review of psychology and philosophy, for July, 1888. The article was written by Francis Winterton from materials gathered from the writings of Rev. F. Morawski, S. J. The title of the article is "The Lesson of Neo-Scholasticism."

> "But the new adherents of the school (the neo-scholastics) admit that there was, besides, a very grave and vital defect in the tactics of the old party (the Aristotelians of the era of Descartes). Copernicus, Galileo, Kepler and Newton had made an irreparable breach in the physical part of the system; and the professors, immovably attached to what they had learned, would not yield, even to truth evidently demonstrated, *but persisted in linking the metaphysics and physics of Aristotle indissolubly together.* Earth as the centrum mundi, the solid crystalline heavens, the primum mobile,—all had to be admitted, or the Organon itself was disorganized, and the Ethics could no longer be upheld. In the face of the clearest certitude, they refused to give way one jot. They nailed their colors to the mast and went down beaten but not captive.
>
> "Many excuses may be found for their conduct, especially the wonderful completeness of Aristotle's system, which they could not find in their hearts to destroy; but the results of their obstinacy were deplorable. Little by little, as more and more numerous adversaries arose against them, it became necessary to admit into the universities men who were not Aristotelians. The latter, at first in

very small numbers, goaded to exasperation by the desperate and unreasoning resistance they met with on every point, became, of course, much fiercer and more dangerous anti-Peripatetics than they probably would have been. The learned world was too willing to take both them and their enemies at their word, and since 'All or Nothing' was the cry, and the whole system could no longer be admitted, broke away from it completely.

"But now things are totally changed. Neo-scholastics frankly admit every forward step in physical science without exception. They only hold to Aristotle's Logic, Psychology and Metaphysics as understood and expounded by the Angelic Doctor."

The Aristotelians have confessed their error in holding to a system of physics which could not endure the objective test of truth. They have disentangled the metaphysics of the master from his physics. But the followers of Descartes are still unrepentant. They still continue to apply his unreliable criterion to measure truth. It is this unreliable criterion which "scientific" psychology applies to its problems today.

And what is the state of "scientific" psychology today? Let Professor James[1] reply.

"When we talk of 'psychology as a natural science,' we must not assume that that means a sort of psychology that stands at last on solid ground. It means just the reverse; it means a psychology particularly fragile, and into which the waters of metaphysical criticism leak at every joint, a psychology all of whose elementary assumptions and data must be considered in wider connections and translated into other terms. It is in short a phrase of diffidence, and not of arrogance; and it is indeed strange to hear people talk triumphantly

[1] *Psychology,* p. 467.

of 'The New Psychology' and write 'Histories of Psychology' when into the real elements and forces which the word covers not the first glimpse of real insight exists. A string of raw facts; a little gossip and wrangle about opinions; a little classification and generalization on the mere descriptive level; a strong prejudice that we have states of mind, and that our brain conditions them; but not a single law in the sense in which physics shows us laws, not a single proposition from which any consequence can causally be deduced. We do not even know the terms between which the elementary laws would obtain if we had them. *This is no science, it is only the hope of a science.* The matter of a science is with us. Something definite happens when to a certain brain state a certain 'sciousness' corresponds. A genuine glimpse into what it is would be the scientific achievement, before which all past achievements would pale. But at present psychology is in the condition of physics before Galileo, and the laws of motion, of chemistry before Lavoisier and the notion that mass is preserved in all reactions. The Galileo and the Lavoisier of psychology will be famous men indeed when they come, as come they some day surely will, or past successes are no index to the future. When they do come, however, the necessities of the case will make them metaphysical. Meanwhile the best way in which we can facilitate their advent is to understand how great is the darkness in which we grope, and never to forget that the natural science assumptions with which we started are provisional and revisable things."

Let us divide this observation of James into two parts, a division which is suggested by his remarks concerning (I) the present, (II) the future.

I. At present "scientific" psychology is not a science. It is nothing but "a string of raw facts,

a little gossip and wrangle about opinions; a little classification and generalization upon the mere descriptive level; a strong prejudice that we have states of consciousness and that our brain conditions them; but not a single law in the sense in which physics shows us laws, not a single proposition from which any consequence can causally be deduced. We do not even know the terms between which the elementary laws would obtain if we had them. This is no science, it is only the hope of a science."

This is the situation in which "scientific" psychology finds itself at the present time, on being audited by the man who was probably the best equipped of his age to act the part of expert accountant in relation to it.

Though this passage is the most valuable contribution James has made to the "Science of Psychology," yet it comes in for little notice. His "stream of thought," the "soul is superfluous" and other similar phrases, are treasured, while this passage is overlooked.

What a contrast between the deep sincerity and philosophic penetration of this passage, and the flippancy of the previous passages in which, relying upon the metaphysics of the nursery, James discarded the soul theory!

The sad feature of the situation is that the ordinary layman in science is likely to carry off the "natural science" conclusion that the soul, as a substantial principle, is superfluous, and that death, of necessity, brings with it the termination of all conscious life. He will infer for himself that morality cannot be more than a mere conven-

tion, to be cast aside at will, that the pagan motto expresses, after all, the most rational system of ethics, "Eat, drink and be merry, for tomorrow we die." The "natural science" psychologists do not teach this ethical, or unethical, principle. In fact they do not teach ethics at all. They merely lay down a conclusion which leads logically to the acceptance of the pagan motto. If the "natural science" psychologists object to the use of their "scientific" inferences as a basis for pagan immorality, the paganist can retort: "I don't see how a sum of mental processes, a stream of thoughts, or a group of nervous reactions, can survive death. Do you see how they can?" The "natural science" psychologists must reply: "We do not." If the paganist argues: "Why, then, should I not live as I choose, obeying the canons of so-called morality when it suits my purpose, and defying them when they oppose my interests or my pleasure?" The "natural science" psychologists have no answer to make.

The practical tendency of this so-called science is to throw back morality for a loss of two thousand years, to take a figure from the gridiron. It seizes, in its turn, the old ideals, but it cannot carry them. It has no power to grip them. It cannot do; it can only undo.

II. When we pass on to the consideration of the second part of the passage from James which attracted our attention, we are forcibly reminded of a sermon we once heard in which the preacher, in a fit of sincerity, told his congregation just what he thought of them, and who enjoyed an unwonted fluency while on this topic. But when

he came to perorate, he could not see quite how to manage. Politely, but effectively, he had pictured them to themselves. He had torn off the mask so that they could not fail to see themselves as they actually were.

Logically there was only one place to which he could assign them. But he did not want them to go away "with a bad taste in the mouth." Accordingly, he concluded with his ordinary peroration: "Notwithstanding all I have said to you, and it is all true, I sincerely hope and trust that we shall all be eternally happy hereafter." It was a nice, wholesome sentiment, and could not do anybody any harm. The real truth, however, and all that was important in the sermon, was contained in the exposition, not in the peroration.

Similarly, all that is important in the statement of James is contained in the first part. There is absolutely nothing in the record of "scientific" psychology, as interpreted by him, to justify the bright hopes of future salvation with which he concludes his estimate of it.

Instead of looking into the future for the development of scientific psychology, James should have looked into the past. There he would have found the master-mind capable of applying the principles of metaphysics to the phenomena of the mind. It is true that the scientists of that age knew very little about physiology, and that St. Thomas was compelled to take the science in vogue in his age. But the contribution which physiology is able to make to the science of the mind is very slight. And even the slight knowl-

edge of physiology which St. Thomas possessed was sufficient for his needs.

Why is it, therefore, that William James, and other men of his type, who wish to be perfectly fair, have failed to grasp the interpretation of mind which St. Thomas has put before them?

It is because, while viewing the same facts, the facts of consciousness, James recognizes no objective standard by which to guide his judgment in arriving at a decision, while St. Thomas has an objective standard to which he adheres both theoretically and practically.

The standard of St. Thomas is the objective truth as manifesting itself to his mind. The practical application of this standard is governed by certain propositions of a universal character, which are called metaphysical principles, but which are in reality the principles according to which everybody reasons in the ordinary affairs of life. Metaphysical principles enunciate the universal truths which underlie all particular truths. Two of these principles we have applied in this chapter:

I. Nothing exists without a sufficient reason.

II. Whatever begins [1] to be, owes its existence to an adequate efficient cause.

We tested Berkeley according to the first principle and found him wanting.

We tested the theories of William James, Dr.

[1] Some philosophers have assumed that a finite being may exist without a beginning; yet, because it is finite, it must owe its existence to an efficient cause. Obviously also they are obliged to hold that every finite being which has a beginning in time must owe its existence to an efficient cause.

Bain, Herbert Spencer and Descartes according to the second principle, and found that they were unsound. It is upon the facts of consciousness, interpreted in the light of these and similar principles, that St. Thomas builds up his system of psychology.

In his preface James declares that he is not going to apply any metaphysical principles. As a matter of fact, however, there are principles underlying his theories, which he certainly would not apply in daily life, and to which he would not be likely to give formal recognition—the metaphysics of the nursery.

Having cut himself off from sound metaphysical principles, James has no objective criterion by which to judge of the truth of the propositions which he lays down. There is nothing to restrain his judgment from any extravagance he may choose to utter.

Of course propositions concerning the mind do, or do not, express the truth, just like propositions upon any other subject. We are physically free to assert that the earth stands still, and that the heavens revolve about it, just as we are physically free to assert that "the thought is the thinker." But the mere utterance of a proposition is no guarantee of its truth.

The truth of the proposition about the movement of the earth does not depend upon our likes or dislikes. We accept it because the objective truth has manifested itself to our minds. Astronomers observe the objective facts, and interpret them in the light of mathematical truth. Both William James and St. Thomas observe the

facts of consciousness. St. Thomas interprets the facts in the light of those metaphysical truths which grown men apply to all the problems of daily life. James interprets the same facts in the light of the principles which the children of those men employ when they wish to escape the consequences of a nursery offense.

James and his fellow "scientists" can appreciate the necessity for sound universal principles in deciding the truth of a proposition concerning the movement of the earth. But when they attempt to settle the problems of the mind, they employ the metaphysics of the nursery.

It is possible, and very probable, that their attitude towards psychological problems is a Cartesian inheritance. Descartes' philosophical system marks a break with the past against which it was a revolution, as distinct in its order as the Protestant Reformation in religion, or Russian Sovietism in government.

Descartes sought truth; but he set up as his criterion of truth a subjective standard, in opposition to the objective standard of scholasticism.[1] His disciples inherited his subjective criterion, and among his disciples we may include all

[1] According to the Cartesian criterion: this piece of money must be a dime because I have a clear and distinct idea that it is a dime.

According to the objective criterion: I have a clear and distinct idea that this piece of money is a dime because, being a dime, it has manifested itself to me as such.

The Aristotelian declares that a dime is not a dime because he knows it is a dime; but he knows it is a dime because it is a dime.

the various schools of "scientific psychology."

For three hundred years the "scientific psychology" mind has been moving away from Aristotle to Descartes. The conquests of genuine science in the material order have seemed to justify the Cartesian philosophy. But the justification is only apparent. Modern sciences, real sciences, are really Aristotelian. They all recognize the objective test of truth, which is an Aristotelian, not a Cartesian, criterion.

Science continued to apply the Aristotelian standard to truth, and by its aid has converted the mysterious in nature into the obvious. There is one field in particular in which the Cartesian principle has been adopted, the field of "scientific" psychology, and it is one field in which no progress has been made—"this is no science!"

And yet, though "scientific" psychology is no science, and known to be no science, "scientific" psychologists still persist in refusing to study a psychology which is a real science. We are searching for the reason. Is it because they feel that they have properly estimated all the systems of the past and found them wanting? How much do they really grasp of the scholastic system? In reading one of the chapters of James' *Psychology* it began to appear to us that he had really penetrated to the scholastic sense; but at the very moment he was about to lay his finger on the vital spot, he turned back, like a blindfolded person in a parlor game. He had not seen the point he had so nearly reached. He never saw that the scholastic system requires the soul as the dynamo

which produces the pulse of thought, that it is the only dynamo which is capable of producing the pulse of thought.

The real difficulty appears to be the very one which William James pointed out—the lack of a sound system of metaphysics. As heirs of Descartes, they have all inherited the subjective criterion—the clear and distinct idea. But they have no certain rules to enable them to test the value of their ideas. The ideas may be clear enough to themselves. But what are they worth? The objective test is as necessary for the psychologist in diagnosing the character of an idea as for the physician in diagnosing the character of a disease. God help the patient when the physician relies upon his clear and distinct idea, and disregards the symptoms and the rules for their interpretation! *Mental phenomena are the symptoms which the psychologist must observe, and metaphysics furnishes the rules for their interpretation.*

Not only are they without metaphysics, but, with the subjective criterion of Descartes as their guide, it would be a near-miracle if they ever succeeded in constructing a system of metaphysics. The objective criterion, which is essential to the establishment of a sound system of metaphysics, is an essential element in scholastic philosophy. It is utterly foreign to the philosophy of Descartes. So long as "scientific" psychology remains Cartesian, it would seem that the bright hopes which William James expressed are doomed to be frustrated. And until they do grasp the real value of sound metaphysics, it is un-

reasonable to expect "scientific" psychologists to appreciate the value of scholastic psychology.

(B.) St. Thomas (1224-1274).—The quotations which we shall give from St. Thomas will be found chiefly in the *Summa Theologica,* Part I, No. III. The *Summa*[1] has been translated from the original Latin by the "Fathers of the English Dominican Province," members of the very Order to which St. Thomas belonged.

A word about the method of St. Thomas. He divides his Subject into Treatises, his Treatises into Questions, and his Questions into Articles. Each Article is headed by a special question which he proposes to discuss. He begins by stating objections to the answer which he intends to give. He then expounds his view and afterwards answers the difficulties.

In giving his own view, he employs, when possible, the words of some representative writer. He quotes the statement of the writer, not as determining the issue, but as forming a convenient reply to the general trend of the difficulties. The real proof is his own argument, which is contained in the body of the Article. Instead of being dominated by authority, as Professor Bowen believed, he concedes to any authority whom he quotes only the importance to which the value of his argument entitles him. *"Non est jurandum in verba magistri. Tantum valet auctoritas quantum ratio allata,"* are his principles. "Our adherence to a proposition must not be determined

[1] Published by Benziger Brothers, New York; and Burns, Oates and Washbourne, London.

by our allegiance to the teacher. The word of an authority is worth only as much as the argument by which it is supported."

We shall allow him to give his answer in his own words; we shall then show how he regards the answers given by each of the other psychologists whose opinions we have discussed.

His answer to our question is found in the *Summa Theologica,* Part I, Number III, Question LXXVII, Article 5, as follows:

> "I answer that the subject of operative power is that which is able to operate and which does operate. * * * Wherefore the subject of power is of necessity the subject of operation.—Now it is clear from what we have said above that some operations of the soul are performed without a corporeal organ, as understanding and will. Hence the powers of these operations are in the soul as their subject. But some operations of the soul are performed by means of corporeal organs; as sight by the eye, and hearing by the ear. And so it is with all the other operations of the nutritive and sensitive parts. Therefore the powers which are the principles of these operations have their subject in the composite and not in the soul alone."

In *Reply, Obj. 1* (same article):

> "All the powers are said to belong to the soul, not as their subject, but as their principle; because it is by the soul that the composite has the power to perform such operations."

St. Thomas here recognizes the single soul which is the principle of all life in the body. The various forms of life which he recognizes are the vegetative, the sentient, the rational. Of these

forms of life two are associated with consciousness, the sentient and the rational. Each of these has its own subject; the soul alone is the subject of rational consciousness; the body, or the composite, as he calls it, the compound of soul and matter, is the subject of sensuous consciousness.

This one passage is sufficient to show how he differs from all the other psychologists whom we have considered.

We shall now consider passages which concern their opinions separately:

First, his verdict on Berkeley's theory: Q. LXXV. A. 4:

> "Since, then, to feel is an operation of man, but not proper to him, it is clear that man is not a soul only, but something composed of body and soul."

Sensation is an act of man, but not of soul alone. It is an act of the body as sentient. Hence, according to St. Thomas, man is not all spirit, but a compound of spirit and matter. He thus takes up a position opposed to Berkeley.

His position in relation to the theory of James, that the thought is the thinker, is stated briefly:

> *Q. LXXV. A. 2:* "Hence, a thing operates according as it exists; for which reason we do not say that heat imparts heat, but that what is hot gives heat."

If he agreed with James he should say: "The heat is the heater," which is the parallel of: "The thought is the thinker."

He not only rejects the formula of James, but also gives his reason, a metaphysical reason, this time: "A thing operates according as it exists."

James wanted to avoid metaphysics; but he involved himself, perhaps unconsciously. St. Thomas is consciously metaphysical; but his metaphysics is the metaphysics which all grown men recognize in their daily life—that every effect naturally results from the action of some substantial thing.

Against Dr. Bain:

> *Q. LXXXVI. A. 1:* "Our intellect cannot know the singular in material things directly and primarily. The reason of this is that the principle of singularity in material things is individual matter, whereas our intellect, as we have said above, understands by abstracting the intelligible species from such matter. Now, what is abstracted from the individual matter is the universal."

Dr. Bain maintains that we have no universal concepts, but merely universal words. St. Thomas maintains that we have universal concepts.

Against Herbert Spencer:

> *Q. LXXVIII. A. 1:* "There exists, therefore, an operation of the soul which so far exceeds the corporeal nature that it is not even performed by any corporeal organ; and such is the operation of the rational soul."

Herbert Spencer admits the existence of universal ideas, but attributes them to the action of the organism. The formation of abstract ideas, whose existence Spencer recognizes, are, according to St. Thomas, beyond the power of a bodily organ.

Against Locke:

> *Q. LXXXV. A. 2:* "The intelligible species is to the intellect what the sensible image is to the sense. But the sensible image is not what is perceived, but rather that by which sense perceives."

If the contrary assumption were true, "it would follow that every science would not be concerned with objects outside the soul, but only with the intelligible species within the soul."

Locke maintains that what the mind knows is its idea. Upon Locke's principle as a basis Berkeley erected his Idealism. In logic Berkeley agrees with St. Thomas. But they differ on fact. St. Thomas rejects, while Berkeley accepts, Locke's fact. The fact which St. Thomas denies, but which Berkeley admits, is that what the mind knows is its idea alone.

Against Descartes:

> *Q. LXXV. A. 3:* "Every operation of the sensitive soul is an operation of the composite."
>
> *Q. LXXVI. A. 1:* "We must assert that the intellect which is the principle of intellectual operation is the form of the human body. * * * For the soul is the primary principle of our nourishment, feeling and local movement; and likewise the primary principle whereby we understand."
>
> *Q. LXXVI. A. 3:* "We must therefore conclude that in man the sensitive soul, the intellectual soul, and the nutritive soul are numerically one soul."
>
> *Q. LXXV. A. 3:* "The ancient philosophers made no distinction between sense and intellect, and referred both to a corporeal principle, as has been said. Plato, however, drew a distinction between intellect and sense; yet he referred both to an incorporeal principle, maintaining that feeling, just

> as understanding, belongs to the soul as such. From this it follows that even the souls of brute animals are subsistent."

Against Descartes, St. Thomas holds that the body lives, that it is animated, and is not, therefore, a mere machine; that the principle of life in the body is the intellectual soul; that brute animals are not mere machines; that they experience sensation; that sensation must, therefore, in man be a product of the composite, and not of the soul alone.

We have now presented the answers to our question offered by the different schools of thought, and we have presented those answers in the words of the exponents themselves. Every conceivable principle for the solution of the problem has been adopted by one or other of these philosophers. In our discussion of the various answers we showed that no answer except the last will endure analysis, and that of the last answer only one presentation is consistent with facts, as viewed by the vast majority of mankind. Thus, we reject the answers given by Berkeley, James, Bain and Spencer, and Descartes. *Unless some other answer is forthcoming which differs not only in language but in meaning from the answers already given, we are compelled to accept the only answer which has not been eliminated.*

We now propose to give a positive presentation of the scholastic argument. In this we can assume that the arguments which we employed in rejecting the other answers are understood. It should not be necessary to repeat them. And yet the value of the scholastic answer can often be best appreciated when set in opposition to a contending opinion. For this reason we shall make frequent reference to the answers of other schools so that the strength of the scholastic position may be recognized by contrasting it with the weakness of the position opposed to it.

To enable the reader the more easily to follow the discussion, we shall divide our presentation into a series of propositions.

PROPOSITION I

15. "There is a vital principle in every living body."

It might be well to state in the first place what we do not mean by this proposition. We do not mean that the vital principle is in the body but not of the body. We do not mean by vital principle a body, large or small. We do not mean that the vital principle is an atom, or etherealized matter in the body. What we do mean by our proposition is this: that every living body is constituted differently from the non-living body; that, while non-living body and living body are both bodies, there is something in the living body which makes it essentially different from the non-living body.

All living bodies grow. Some living bodies grow and feel. Growth and feeling are the phenomena of bodily life. Phenomena must be traced to their cause. They must have some cause. Since the phenomena of growth and feeling which characterize living bodies are essentially different from all the phenomena of non-living bodies, there must be something in the living body by which it differs essentially from the non-living body. That something is what we understand by the vital principle.

What does this vital principle effect in the living body which makes it differ from the non-living body? It imparts to the living body (I) the power of immanent activity, (II) unity.

I. The activity of a body may be either transitive or immanent. The activity of a railroad engine in hauling a train of cars is transitive. The movement of the cars is not due to any initiative of their own. They receive their impulse to move from the engine.

A piano is capable of producing musical sounds. But there is no power in the piano itself to produce music. The piano must be acted upon before it can act. The action of the pianist is transitive. The piano, set in motion, produces effects in the air about it. The air does not originate its own movement any more than does the piano. Both are dependent for their activity upon some external agency. So is it with all non-living bodies.

Immanent activity is of another sort. The body possessing the power of immanent activity can act of its own initiative. The effect of the immanent act remains within the agent producing it, and perfects the agent. The assimilation of food is an act of the body, by the body, and for the body. The human body is not a collection of buns and beefsteaks. The human body by activities of its own picks and chooses what it requires from the buns and beefsteaks. What it takes for itself it transforms into its own substance. The rest it casts away. In this its action is altogether different from that of the crystal, which adds to its bulk by accretion from without, not by transformation and assimilation from within.

Growth is an evidence of immanent activity in the living body. All living bodies grow. Some living bodies grow and feel.

Feeling, in the comprehensive sense, is coextensive with sensuous life. Feeling, like growth, is an immanent act. Our external senses act only when acted upon. But when acted upon they react, and by their reaction produce effects which remain within the agent producing them, and perfect the agent.

It is by preserving within itself the sensuous images which it receives through the senses that the dog is able to recognize his master.

A camera plate can receive an impression from the object which reflects light upon it, and it can retain the image of that object, but it cannot recognize the object. The camera plate is a passive recipient of an impression from without. It does not transform and assimilate the impression.

Your mirror will reflect your countenance, but it will never recognize you, no matter how often it reflects your countenance. Its action is merely transitive. Your mirror does not transform and assimilate the impression you make upon it. It is totally dependent for its activity upon the external object. It has no initiative of its own. It does not perfect itself by reflecting your countenance, though you may perfect your countenance through the aid of your reflection in the mirror.

Growth and feeling result from immanent activity. By immanent activity the body produces effects which remain within the body and perfect the body. Every body, whether living or nonliving is capable of transitive activity. Only the living body is capable of immanent activity.

Since every effect requires an adequate efficient

cause, and since the effects of immanent activity in the living body are essentially different from the effects produced by the non-living body, the living body, as the efficient cause of those effects, must be essentially different from the non-living body. To be essentially different from the non-living body there must be some element in the living body which is not found in the non-living body. *This essential element we call the vital principle.*

II. Every living body is composed of parts, and parts that are heterogeneous. In single-celled bodies there are heterogeneous parts in the single cell. In multi-cellular bodies there are always quantitatively, and qualitatively, different parts. When the parts have a special construction, and are adapted for the performance of particular functions, like the eyes, ears, heart, lungs, they are called organs. A body made up of a combination of such organs is called an organism.

The unity of the living body is manifested always by its vegetative functions, and by sentient as well as vegetative functions, if the body is a sentient body.

The vegetative functions reveal the unity of the body by distributing nourishment to all parts of the body. They reveal the unity of the body by making repairs, according to capacity, whenever any part of the body is injured. They reveal the unity of the body by the destruction which occurs to the whole as a consequence of an injury to a part. The corpse dissolves into multitudinous particles which do not co-operate for the welfare of all. Each element pursues its own course re-

gardless of the careers of the others. Co-operation characterizes the constituent elements of the living body. Anarchistic indifference to the condition of every other element characterizes the atoms of the corpse.

If the body is sentient, the organs of touch, taste and smell, hearing and sight, when the body is equipped with these organs, co-operate in furnishing information which is necessary for the well-being of the body.

The vegetative and sentient functions contribute to the welfare of one another. The vegetative functions erect and maintain the nervous structure by which sensuous functions are exercised. Sensuous activities report the needs of the vegetative department, and prompt the animal to provide for their fulfilment.

Thus we see that the vital principle reveals its presence in the living body by (1) the power of immanent activity, which is common to all living bodies; (2) by the co-operation of all the parts of the living body for the welfare of the whole; which evidences a unity in the living body resulting from the activity of the vital principle.

Considered as the principle of immanent activity, and as the principle of unity in the living body, this vital principle is called by St. Thomas the substantial form of the living body.

Hylomorphism.—The Theory of Prime Matter and Substantial Form, or Hylomorphism, as it is sometimes called, was taken over by St. Thomas from Aristotle.

As understood by St. Thomas this theory represents all bodies as composed of two distinct ele-

ments, one passive and indifferent, the other active and determining. It recognizes that in every substantial change something substantial goes, something substantial comes, and something substantial remains. The something substantial which goes and comes was called by him the "substantial form." Physical science teaches that, while matter can change its form, it cannot naturally be destroyed. That element in every body which is indestructible is what St. Thomas calls "prime matter." The form which can be replaced by another form is what St. Thomas calls the "substantial form."

"Substantial form" must not be confused with mere shape or appearance. Liquefied hydrogen may have the same appearance as water, but it has different specific properties. It is not the same substance as water. In the language of St. Thomas, these two substances differ because the matter of the one is actuated by a different substantial form from that of the other.

Liquefied oxygen and liquefied hydrogen each has its own substantial form. Combine them so that they will form water, and, though the appearance remains the same, chemists recognize in the product a new substance. All the matter of the two elements remains; but the two substantial forms have been replaced by a single substantial form. Evidently something substantial has gone, and something substantial has come, or it would be impossible to have a new substance. It is not the matter that disappeared, else the chemist would have created rather than transformed. The chemist does not create. He transforms one sub-

stance, or several, into another. He accomplishes precisely what the word "transform" signifies—he carries the matter across from one form to another.

We do not see matter apart from form, or form apart from matter. Matter is always "informed" by some substantial form. This form is not a mere nothing, nor an aspect of a body, otherwise water would be really the same thing as oxygen and hydrogen. If water is something substantially different from its component elements, the form of water must be a substantial principle. Water, therefore, is not matter alone, nor form alone, nor matter and form existing apart but simultaneously. It is a compound of two substantial principles, both incomplete substances, prime matter and substantial form, which combine to form one complete substance—water. So is it with all inorganic substances. Modern chemistry does not disprove this theory, which is more than two thousand years old. On the contrary, it is the one theory which fits in with all the facts which chemistry has established.

Reduce the unit body to any dimensions you choose: so long as it remains a body, that unit body will be composed of prime matter and substantial form.

The same matter may be successively actuated by various forms. The matter of the world is fixed in quantity. The forms under which it appears are constantly changing. Since matter always remains the same in quantity, it is said to be the principle of the multiplicity of parts in a body; while form, which goes and comes, is the

principle of unity in the body. Matter of itself is indifferent to all forms, though it must have some form. Matter must be wedded to some form, but no form is its affinity. One body may have an affinity for another body. But prime matter is indifferent to all forms. It receives its form passively. Passivity and indifference to any particular form, characterize matter, as chemistry can testify. Nearly every chemical element will enter into combination with some other element, or elements, to form a new substance. Matter is the indifferent element; substantial form determines the character of the activity which the body will possess, the species to which it will belong. Substantial form makes the matter to which it is united the matter of this body.

Matter, as we use it here, is not employed in the popular sense. As popularly used, matter signifies a body. As we use it here, it signifies one of the two constituents of which all bodies are composed, the indestructible [1] element in the material universe which is successively actuated by form after form.

We have given this explanation of hylomorphism, not because the theory is essential to our thesis, but because it illustrates the relation of the vital principle in the living body to the matter of the body. Naturally, one is desirous of knowing what there is in the living body to which this vital principle can be attached. It can now be understood that it is attached to that indifferent

[1] The indestructibility which we here predicate of matter is natural, not absolute.

element which is found in every body. It is not, however, attached to matter as a horse is attached to a wagon. For, horse and wagon each is a complete substance. The union between them is extrinsic, accidental. The matter of the living body, and the vital principle, are not two complete substances, like the horse and the wagon. They are two incomplete substances, which combine to form one complete substance, the living body.

The Soul.—This vital principle in the living body is, by St. Thomas, called the soul.

The soul may be vegetative only, or sentient and vegetative, according as the body is merely vegetative, or vegetative and sentient. According to St. Thomas the one soul in man is rational, sentient and vegetative; i.e., the rational soul has the power to unite with matter and so to vivify it that the resulting body will be vegetative and sentient.

That the living body has within it something which makes it essentially different from the non-living body, we showed in our discussion of Descartes' answer. What that something is, we have attempted to explain under the present proposition.

Spontaneous Generation.—If it be asked whether life may not result merely from the collocation of material elements, our answer is, first, that life has never been known to originate except through life, *omne vivum e vivo.* Spontaneous generation has never been known to occur. Secondly, chemists are able to produce the combination of elements represented by the chemical formula for

protoplasm. But they cannot make their chemical compound grow. Protoplasm has in it the power of growth. It must, therefore, have in it some element which defies chemical analysis. That principle is the principle of life, not because it defies analysis, but because, when it is present, the body is capable of vegetative activity.

PROPOSITION II

16. "The sentient powers of the mind have their subject in the sentient body."

The text from St. Thomas upon which this thesis is based is found in Q. LXXVII. A. 5:

> "But some of the operations of the soul are performed by means of corporeal organs, as sight by the eye, and hearing by the ear; and so it is with all the other operations of the nutritive and sensitive parts. Therefore the powers which are the principles of these operations have their subject in the composite, and not in the soul alone."

By the "composite" it is clear that St. Thomas understands the body as sentient, since he specifically mentions eye and ear as the organs through which the sensuous powers of sight and hearing are exercised.

In *Reply, Obj.* I (same article), he writes:

> "All the powers belong to the soul, not as their subject, but as their principle; because it is by the soul that the composite has the power to perform such operations."

It is impossible to misunderstand the meaning of this passage: "*the composite has the power to perform such operations.*" The soul is the root principle of all life in the body. But the soul is not the subject of all the vital acts of the body. It is not the soul, but the body, which grows. *St. Thomas attributes sensation, no less than growth, to the body.* Both are bodily functions, according to his philosophy.

Descartes, as we have seen, makes sensation a function of the soul alone. By so doing he is compelled to deny sensation to the brute. From this, however, he does not shrink, since he regards the bodies of both brute and man as mere machines. Having refused to recognize the soul as the substantial form of the body, he has no other alternative. Descartes, recognizing in man only a single soul, which, in his opinion, is not the substantial form of the body, is logically compelled to regard the body as a mere machine.

We do not agree with Descartes' view that sensation is an act of the soul alone, but we concede the correctness of his inference, that if sensation be an act of the soul alone, it can be so only because the soul is not the substantial form of the human body.

According to our view the body is not a mere machine. The animal body lives. It grows and feels. Growth and feeling are the phenomena of bodily life, and feeling no less than growth.

It is apparent, beyond cavil, that the body grows. Feeling, according to St. Thomas, belongs to the body no less than growth.

In medio stat veritas. Descartes errs by mak-

ing sensation a function of the soul alone. Materialists err by making sensation a function of matter, uninformed by a vital principle.

Descartes recognizes that only a living thing can feel. Materialists recognize that the body feels, though they refuse to concede a vital principle to it.

St. Thomas grasps the entire truth by seizing upon the partial [1] truths which his opponents emphasize. He recognizes with Descartes that only a living thing can feel. He recognizes with the materialists that it is the body which feels. St. Thomas can afford to concede each of his opponents all that he has a right to demand. And he can do so because he recognizes the human body as a living body, the matter of which is vitalized by the one rational soul in man. The human body is a living thing. By holding to this proposition St. Thomas takes the force out of the argument of Descartes, who refused to attribute sensation to the body because he regarded it as a mere machine.

[1] "To the prevalent neglect of the study of the mutual relations of mind and body may be traced many of the fallacies discernible in the arguments adduced on each side, in the oft-repeated controversies between the advocates of the materialistic and the spiritualistic hypothesis;—controversies in themselves almost as absurd as that mortal contest, which (as fable tells us) was once carried on by two knights respecting the material of a shield seen by them from opposite sides, the one maintaining it to be made of gold, the other of silver, and each proving to be in the right regarding the half seen by himself." (*Principles of Mental Physiology,* by Wm. B. Carpenter, p. 2.)

With the materialists St. Thomas can attribute sensation to the human body, but he attributes sensation to it as a living body, the matter of which is actuated by a vital principle, while they involve themselves in inextricable difficulties by attributing vital functions to matter which has no principle of vitality in it. They recognize the phenomena of life, while denying to the body any vital principle.

Both the dependence of sensation upon the bodily organ, and the very character of sensation, make it apparent that sensation is a function of the body. The diseases of eye and ear affect sensations of sight and hearing. And so for all the other senses. When the organ of sight is so injured that it cannot function, all sensation of sight is lost. Sensation always makes us acquainted with an individual object. We hear particular sounds, we see particular colors. We do not hear sound in general, nor do we see color in general. The sense apprehension is always as particular as a photograph or a phonograph; sensation is as particular as the stamp on a coin;— all of which is in contrast to the abstractions produced by the intellect, which can apprehend color in general, and sound in general, and all the countless generalities with which literature is filled.

George T. Ladd, late professor of psychology at Yale, in his *Elements of Physiological Psychology*,[1] remarks that it is difficult to understand

[1] p. 590.

how our acts of consciousness can in any sense be called brain-products.

According to Ladd the subject of consciousness is a "real unit-being called mind, which is of non-material nature." This mind, he admits, is "especially correlated with certain material molecules and masses forming the substance of the brain."

Professor Ladd may differ from Descartes in his notion of the character, origin and destiny of this "unit-being-of-non-material nature," but his notion of the human body appears to be Descartes' idea dressed out in the terminology of the nineteenth century. The "certain material molecules and masses forming the substance of the brain" is the nineteenth century equivalent for Descartes' proposition that the body of man is a mere machine.

Certainly "it is not easy to see what could possibly be meant, that is worth serious consideration," by speaking of the phenomena of consciousness as "the product of the brain," if the brain is to be regarded as merely part of a machine. But is the brain merely a part of a machine? Or is it an integral part of a living body? Previously, in our discussion of Descartes' answer, we showed that the human body cannot be regarded as a mere machine. It is not to the brain as a part of a machine that we attribute sensuous consciousness, but to the brain as an integral part of a living, sentient body.

Professor Ladd's difficulty once more brings up the question of sensation in the brute. Did he wish to deny sensuous consciousness to the brute,

as Descartes did? It does not appear so. Then the brute is capable of sensation. And there must be in the brute, as in man, "a real unit-being-non-material." This would be equivalent to conceding to the brute a spiritual soul, if spiritual soul is what is meant by this expression.

It is difficult to understand how the activities of the mind can be the mind, if the mind is a "unit-being." Professor Ladd apparently wished to hunt with the hounds and run with the hare. With orthodox Christians he wanted a mind that would be a "unit-being." With the Empiricists he wanted a mind that would consist in its own activities. When he is forced to a choice, Professor Ladd, notwithstanding his "unit-being," seems to adopt the view of the Empiricists, that the mind is a sum of processes.[1]

[1] Professor Ladd's definition of mind appears to be nothing more than a definition of consciousness:

"Its origin is *in* and *of* these its first conscious activities. * * * Those activities are its existence."

This definition applies to consciousness, not to the subject of consciousness. As a definition of mind for the phenomenal psychologist who confines his attention solely to the study of mental phenomena, we have no objection to it. But when Professor Ladd, relying upon the value of this definition, proceeds to rule the substantial soul out of existence (*Philsophy of Mind*, pp. 363, 364), we are forced to take exception to its use.

Professor Ladd refuses to recognize consciousness as a state of any thing. It is a sort of absolute accident. Without any warrant from revelation, he gives us an explanation of consciousness which involves as great a mystery as the Catholic dogma of the Blessed Eucharist. As the Catholic dogma of the Blessed Eucharist teaches

At any rate, Professor Ladd, by making this "unit-being" the subject of all states of consciousness, obliterates all possibility of difference between sensuous and rational consciousness.

that the accidents of bread and wine remaining after the consecration are absolute accidents, inhering in no subject, so Professor Ladd, apparently, regards consciousness as an insubstantial thing, an accident, which exists without inhering in any subject.

The Catholic Church in requiring its subjects to accept the mystery of the Blessed Eucharist bases its teaching upon revelation. It does not claim that it is *naturally* possible for an accident to exist without inhering in some subject. According to Catholic teaching the preservation of the accidents apart from their natural substance in the Blessed Eucharist involves the exercise of the absolute power of God.

Professor Ladd asks us to admit it as a "scientific" truth, of the natural order, that consciousness, an insubstantial thing, an accident, exists without inhering in any subject. It begins to be. Yet is is not the product of the brain, or of the substantial soul, or of any substantial thing.

As Topsy in *Uncle Tom's Cabin* declared that she "never had no father, nor mother nor nothin'," so consciousness, according to Professor Ladd, is not fathered by anything substantial. It just "begins to be." One explanation is as naïve as the other.

In the order of nature, as we understand it, it is no more possible to have a state of consciousness which is not a state of some thing, than to have a smile without a face. We recognize two sorts of consciousness, sensuous and rational. What we maintain in the present proposition is that sensuous consciousness is the product of the activity of the sentient body, and that it inheres, as an accident, in the sentient body as its subject, after production.

PROPOSITION III

17. "The intellect, which is substantial and spiritual, is not different in substance from the animating principle of bodily life."

In this proposition three assertions are involved:

A. The intellect is substantial.

B. The intellect is spiritual.

C. The intellect is not different in substance from the animating principle of bodily life.

We shall take up these assertions in the order in which they are set down:

A. The intellect is substantial.

The text from St. Thomas in which our proposition is found is contained in Q. LXXV. A. 2:

> "It must necessarily be allowed that the principle of intellectual operation which we call the soul is a principle both incorporeal and subsistent. * * * Therefore the intellectual principle which we call the mind or the intellect has an operation per se apart from the body. Now only that which subsists can have an operation per se. For nothing can operate but what is actual: Wherefore a thing operates according as it is; for which reason we do not say that heat imparts heat, but that what is hot gives heat. We must conclude, therefore, that the human soul, which is called the intellect or the mind, is something incorporeal and subsistent."

The argument of St. Thomas amounts to this, that our thoughts, judgments and inferences require for their production a principle which in its own order is as substantial as the dynamo. As a

substantial dynamo is required for the production of electricity, so a substantial principle is required for the production of thoughts, judgments, inferences. The principle which produces these mental acts is called the intellect.

The substantial character of the intellect must be recognized by all who see in the intellect something more than a passing thought, an association of ideas, or a function or aspect of organized matter. Descartes made no difficulty about conceding the substantial character of the intellect. Whatever has an operation of its own must be so recognized, unless one wishes to say that "heat imparts heat," and that the heat is not produced by any substantial thing.

Thoughts are like bubbles in a pool. The bubbles succeed one another. They are not produced by one another, nor do they inhere in one another. They are produced by the pool and inhere in the pool. As the subject by whose activity thoughts are produced, and as the subject in which they inhere, the intellect might be called the pool of thought.

James denied the substantiality of the intellect, as did Hume. But without the substantial intellect neither could account for thought. Thought is not a self-existing being. It begins to exist. Whatever begins to exist must have an adequate efficient cause. It is a product. What is the producing agent? Neither of these philosophers had any adequate explanation to offer. To assert that there is no substantial intellect because "When the brain acts, a thought occurs," is to beg the whole question. The existence of the in-

tellectual idea is inexplicable upon any assumption except that it is produced by a substantial intellect.

Can the Intellect Apprehend Itself?—St. Thomas maintains that the intellect comes to a knowledge of itself through its own acts:

> "The mind knows itself by means of itself, because at length it acquires knowledge of itself, though led thereto by its own act."[1]

In holding this proposition St. Thomas differs from Kant, who recognized the existence of intellectual products, but denied that the intellect can apprehend itself:

> "The unity of consciousness, which lies at the basis of the categories, is considered to be an intuition of the subject as an object; and the category of substance is applied to the intuition. But this unity is nothing more than unity in *thought*, by which no object is given; to which, therefore, the category of substance—which always presupposes a given intuition—cannot be applied. Consequently the subject cannot be cognized. The subject of the categories cannot, therefore, for the very reason that it cogitates these, frame any conception of itself as an object of the categories; for, to cogitate these, it must lay at the foundation of its own pure self-consciousness the very thing which it wishes to explain and describe."[2]

The philosophical significance of the proposition of St. Thomas that the intellect apprehends itself as the substantial agent which produces our thoughts cannot be overestimated. It ensures to

[1] Q. LXXXVII. A. 1.
[2] *Critique of Pure Reason,* Meiklejohn, p. 249.

the mind from the very outset the concepts of substance and accident, cause and effect. The mind is not obliged to seek a foundation for these concepts in the outer world. It discovers that foundation within itself.

This capacity of the mind to recognize itself as a producing cause is set forth as follows by Cardinal Newman in his *Grammar of Assent:*[1]

> "It is to me a perplexity that grave authors seem to enunciate as an intuitive truth that everything must have a cause. If this were so, the voice of Nature would tell false; for why in that case stop short at one who is Himself without cause? The assent which we give to the proposition as a first principle, that nothing happens without a cause, is derived in the first instance from what we know of ourselves; and we argue analogically from what is within us to what is external to us."

The denial of our proposition leads to skepticism or idealism, according to the character of the thinker. It led Hume into skepticism; it led the followers of Kant into idealism. Skepticism and idealism are perverted fictions of patent reality. Each is a species of intellectual nihilism. The conscious life of the normal person certainly does not begin with skepticism, nor does it end in intellectual nihilism.

The Alternatives.—Our contention, therefore, resolves itself into this, either admit that the intellect is a substantial principle, the efficient cause of our thoughts, or be prepared to face the skepticism of Hume and the latent idealism of Kant.

[1] "Presumption," 5.

If the intellect be not a substantial principle, the efficient cause of our thoughts, our thoughts may be ourselves, for aught we know, and we are merely aggregates of perceptions; or, possibly, modes of a single, immaterial, infinite substance.

If we are to realize that the world in which we live is a real, and not a phantom, world, we must first recognize that we ourselves are realities and not phantoms. We can recognize ourselves as realities by recognizing the intellect as a substantial principle, the efficient cause of our thoughts. Upon this proposition as a basis we can build up an interpretation of life as contact of reality with reality in a world of realities. And we can legitimately pass on from the actual realities of the visible, to the possible realities of the invisible, world. Existence becomes intelligible, instead of being a blank enigma.

18. B. The intellect is spiritual.

> "If the understanding were a corporeal substance, intelligible ideas of things would be received in it only as representing individual things. At that rate the understanding would have no conception of the universal, but only of the particular, which is manifestly false." [1]

When we affirmed that the intellect is as substantial as the dynamo we did not wish to imply that the intellect is a material substance like the dynamo. Our present assertion declares that it belongs to the order of spiritual beings.

A substantial, spiritual thing is the antithesis of the material substance. A material substance

[1] *Of God and His Creatures,* Rickaby, ch. XLIX.

is a body. Every body has physical parts which can be separated from one another. A spirit has no parts that are physically separable, and in this sense it is said to be *simple*. But in this sense the vital principle in every animal body is simple. Simplicity and spirituality are not convertible terms. That which is spiritual is simple; but not everything that is simple is spiritual.

A spiritual being is immaterial in its existence. It is not made up of matter. In its existence it is by its very nature independent of matter; and in its operations it is intrinsically independent of matter, though for its operations it may be extrinsically dependent upon matter.

The spiritual nature of the intellect is not immediately evident to the intellect itself, or philosophers would not have disputed throughout the ages concerning it. That the intellect is by nature spiritual, can be known only by inference based upon principles and facts.

What principle shall we employ, and what facts shall we consider, in working at a solution of this problem?

We feel that we are safe in taking as our principle: *operari sequitur esse;—the nature of the activity conforms to the nature of the agent.*

When the nature of the activity is such as to exceed the capacity of any material agent, whether non-living or living, our principle leads us to infer that the agent which exercises this activity is immaterial. It is spiritual in the sense in which we have defined spiritual.

The facts which we must consider in determining the nature of the intellect are the operations

which are attributed to it; general concepts, judgments, inferences.

Since general concepts are involved in judgments, and judgments in inferences, it is sufficient to show that only a spiritual power can produce general concepts. The power that is spiritual in the production of general concepts is spiritual in the production of judgments and inferences. We shall, therefore, narrow the question down to this: Is a spiritual power required for the production of general concepts?

A general concept, such as that expressed by the term "man," represents something common to all men. It does not represent what is peculiar to any individual, such as size, appearance, ability, manners.

Can such a concept be the product of the activity of the organism? The organism has physical parts. Each part is distinct from every other part. Each brain-cell is distinct from every other brain-cell. Each part of each brain-cell is distinct from every other part of the same cell. Any mental representation, therefore, which is produced by brain activity must be extended, i.e., one part of it is distinct from another part of it. As the photograph produced by means of the camera may be large or small, so the mental representation produced by brain activity may be large or small. But, whether large or small, the mental representation produced by brain activity, must, like the photograph, have some extension.

Now, a representation which has any extension whatever must be as particular as a photograph.

It may represent an individual or a multitude of individuals. But the individual is particular, and the multitude is particular. Even a painting, if it has any representative significance in reality, is limited to the individual person or object, or to the particular multitude. There is no photograph produced by means of the camera which represents all men taken singly, and represents them equally well. Nor can such a representation be produced by the painter or the sculptor.

Particularity in representation characterizes the image produced by organic activity, as it characterizes that produced by the photographer and the painter.

Universality in representation characterizes the intellectual image. The mental representation corresponding to the word "man" is a delineation of no man in particular, but a likeness of something that is common to all men.

Since such a representation is beyond the power of the organism, the power which produces it must be intrinsically independent of the organism in its production. And, according to our principle, since this power is intrinsically independent of matter in its activities, it must be intrinsically independent of matter in its existence. And a power which is intrinsically independent of matter in its operations and in its existence, is spiritual. We must say, therefore, that the intellect is spiritual.

Darwinism and Differences.—Darwin, in his *Descent of Man*,[1] holds that the mental powers of man

[1] ch. XXI.

are the "same in kind" as those of the brute, though "different in degree." His position is directly opposed to ours. We maintain that the mental powers of man and brute differ, not only in degree, but in kind. All the mental activities of the brute can be explained on the assumption that it can acquire knowledge by instinct, sense experience, imitation and training. It evidences no power of abstract reasoning. Its mental activities are always concerned with the particular. Mathematical reasoning is beyond its power. Fixity of habit, not progress, characterizes the world of brutes. Man is always the *homo sapiens,* always capable of progress, though not always living up to his capabilities.

The power of producing general concepts, and of employing them in judgments and inferences, differentiates the mind of man from the mind of the brute. It is our recognition of the possession of this power by man that compels us to reject the dictum of Darwin that the mental powers of the brute and of man are the same in kind and different only in degree.

19. C. The intellect is not different in substance from the animating principle of bodily life.

St. Thomas discusses this problem in Q. LXXVI. A. 1. The article is headed by the question: "Whether the intellectual principle is united to the body as its form?" Preceding the exposition of his own views there are six objections which go to prove that the question is to be

answered in the negative. Then, in his usual manner, he replies: "On the contrary," and argues from the words of Aristotle that the question must be answered in the affirmative. In the body of the article he declares:

> "We must assert that the intellect which is the principle of intellectual operation is the form of the human body."

When in *A.* we declared that the intellect is substantial, we did not say that it is a substance complete in itself. We argued to its substantiality from the fact that it has operations of its own, the production of general concepts, judgments, inferences.

What is substantial need not necessarily be a complete substance. It may be a substantial principle, yet an incomplete substance. In this sense every substantial form, as understood in the hylomorphic theory, is an incomplete substance. What St. Thomas asserts here is that the intellect, which is a substantial principle, is the substantial form of the human body.

His argument, however, for the substantial nature of the intellect does not apply to other substantial forms. The operations of the intellect upon which he rests his argument for its substantial character are not produced by other substantial forms. The intellect is a substantial form, but a peculiar substantial form, in that it has operations of its own. Descartes did not recognize the intellect as the substantial form of the human body. Yet he recognized its substantial character because of its operations. St. Thomas

establishes its substantial character from its operations and then proceeds to its identification as the substantial form of the human body.

In proof of our proposition that the intellectual principle is identified with the vital principle of bodily life, we cite the following facts:

I. All the manifestations of life in man can be grouped under four categories: vegetative, sentient, locomotive, rational.

II. The activities of these grades of life harmonize. The vegetative erects and maintains the sentient organism by which the activities of sensuous life are exercised. Sensuous and intellectual activities parallel each other: "When the brain acts, a thought occurs."

The unity of the human body is the principal fact upon which St. Thomas rests his argument for the unicity of soul in man:

> "In the first place, an animal would not be absolutely one, in which there were several souls."[1]

By identifying the intellect with the substantial form of the human body, we have one principle of all the forms of life in the body of man. The erection and maintenance of the organs by which sensuous activities are exercised, the correspondence in the activities of sense and intellect, all point to a single active principle as the determining factor of all the powers of man. On the assumption that all the powers which are peculiar

[1] Q. LXXVI. A. 3.

to the human body spring from this one source, we have an adequate explanation of the marvelous co-operation of all its powers. To suppose a multiplicity of such principles, whether three, as Plato did, or myriads, as materialists do, is to introduce elements of conflict and confusion. There is evidently unity in the human body, which can be adequately explained only on the assumption that there is a single vital principle dominating the matter of the body, the source of its unity and of the powers which characterize it.

An Objection.—An argument against the thesis of St. Thomas might be based on the theory of Averroes, the Mohammedan interpreter of Aristotle. Averroes maintained that the potential intellect is one single substance existing in all men. Each individual has not an intellect of his own, but there is one intellect possessed in common by all. According to this theory the powers of intellection and the powers of sensation are distinct from each other, not only as powers but as things.

It would appear to be the theory of Averroes which William James had in mind when he wrote:

> "I find the notion of some sort of anima mundi existing in all of us a more promising hypothesis, in spite of all its difficulties, than that of a lot of absolutely individual souls."[1]

St. Thomas contends against Averroes that there is one soul in each human body and that the active and potential intellect "are united in the one substance of the soul."[2]

[1] *Principles of Psychology*, vol. I, p. 346.
[2] *Of God and His Creatures*, Rickaby, cc. LIX, LXXVII.

The theory of Averroes, though not the same as that of Fichte, is exposed to many of the objections brought against idealistic pantheism. Each of us is convinced that his mind belongs to himself alone, that it is open to him and closed to everybody else. If we can be mistaken about a fact which appears to us to be so evident, we cannot be certain about anything. The absurdity of universal skepticism to which the theory of Averroes logically leads, necessitates the rejection of the theory.

Locus of the Soul.—Having established his proposition that the intellectual principle must be regarded as the substantial form of the human body, St. Thomas proceeds to discuss the question whether the entire soul is in every part of the body. His answer is:

> "It is enough to say that the whole soul is in each part of the body by the totality of perfection and of essence, but not by the totality of power. * * * With regard to sight, it is in the eye; and with regard to hearing, it is in the ear." [1]

The body has parts which can be physically separated from one another, as an arm from the rest of the body. The soul has no parts which are physically separable. Therefore wherever it is present at all, it is present in the totality of its essence. The body is said to be circumscriptively present in space, the different parts of the body occupying different portions of space. The soul is said to be definitively present in the body.

It must not be supposed that the soul has physi-

[1] Q. LXXVI. A. 8.

cal quantity like a body. The soul of the giant is no bigger than it was when he was an infant. You can measure a body with a foot rule. You cannot measure a soul or weigh it. As spiritual, it possesses none of the marks peculiar to a material thing. The body, which is a material substance, can naturally be in only one place, at one time. And all the parts of the body—trunk, arms and legs and head—occupy distinct portions of space: one part is outside another. In the soul, which is spiritual, there are no parts which are distinct from one another, as the head is distinct from the arms; the soul has no quantitative extension. Like the angel, the soul is by nature spiritual. The absurdity implied in the question: How many angels can dance on the point of a needle? has evoked many a good laugh. That laugh, if it signifies anything, means that it is perfectly evident a spiritual substance has no quantitative extension. Wherever it is present at all, it is present in its totality. It is, therefore, entire in the entire body and entire in every part of it.

A Misconception.—In the light of this presentation, the following characterization of the soul, which is found in a lecture by Dr. Kirsopp Lake, entitled "Immortality and the Modern Mind," will seem strange indeed:

> "The theory that the body is a mechanism operated by the soul which is a material entity composed of lighter and more ethereal substance has nothing to commend it, when viewed by the cold gaze of modern science."

From the treatment of the subject in the pre-

ceding pages it is evident that this characterization does not fit the soul as conceived by St. Thomas. According to St. Thomas the body of man is not a mechanism, nor is the soul a material entity of any sort. Where Dr. Lake obtained this description of the soul it is difficult to conceive. Somebody noted on the margin of the page of his copy: "This is the opinion of Descartes." No one would have resented this observation more than Descartes himself. Descartes explicitly recognizes the spirituality and immortality of the soul. It is possible, however, that Dr. Lake confused Descartes' idea of the soul with his theory of "Animal Spirits." His characterization of the "soul" would fit in with Descartes' description of these. It is possible, also, that he derived his concept from some of the pre-Aristotelian philosophers. But their antiquated notion does not represent what in modern times is understood by soul.

There is no more important question for us, as philosophers and as men, than the immortality of the soul. If immortality is to be denied in the name of "science," "science" should at least take pains to ascertain precisely what it is that it denies. It is hardly necessary to say more on this subject.

The Law of the Conservation of Energy.—Perhaps we have carried our explanation beyond the proper limit; but with our mind fixed on mind, we wished to show the bearing of this thesis upon the principle which we regard as the source of all our rational powers, and as one of the two constituent elements of the sentient body which pro-

duces the phenomena of sensuous life within us.

The proposition which we have just explained is supposed by some to be in opposition to a theory known as the Law of the Conservation of Energy.

James Ward, in *Naturalism and Agnosticism*[1] states the case against us as follows:

> "In other words, the master generalization of the physical world, that of the conservation of energy, would be violated by the assumption that energy could appear or disappear in one form without at once disappearing or reappearing to a precisely equivalent amount in another. Brain changes could not then be transformed into sensations, or volitions be transformed into brain changes, without a breach of physical continuity; and of such breach there is supposed to be no evidence."

How is the Law of the Conservation of Energy defined?

> "In every case, without exception, it is found that the sum-total of all the energy within any given boundary, through which energy is not allowed to pass, remains constant, although the energy within the boundary may be transformed into any of the many forms in which it is capable of existing. * * * It follows that if the boundary considered includes the universe, the principle of the Conservation of Energy amounts to a statement that the sum-total of the energy of the universe is a fixed mathematical quantity."[2]

The Law of the Conservation of Energy has been hailed as the greatest discovery of the nine-

[1] Gifford Lectures, vol. I, p. 11.

[2] Watson, *A Text-book of Physics*, p. 87; quoted by Sir Bertram Windle, *The Church and Science*, p. 306.

teenth century. And the names associated with the discovery are held in high honor.

This law, in so far as it has been scientifically established, belongs to the science of physics. When employed by psychologists as an argument against the existence of the intellect as a spiritual, substantial principle, it is lifted out of its proper sphere.

"The sum-total of the energy of the universe" is certainly not "a fixed mathematical quantity," if "the sum-total of energy" is to include vital, as well as physical, energy. While it may be true that the amount of physical energy in the universe is a fixed mathematical quantity, it is by no means true that the sum-total of energy is so fixed. Vital energy can increase or diminish, without any addition or diminution of the energy of the inorganic elements in the universe. The number of human beings upon the earth today is several times greater than in the days of Charlemagne. Vegetation flourishes today in the deserts of the ages past. Yet the sum-total of chemical and physical forces remains unchanged.

The facts upon which the law is based concern the physical properties of matter. A law can be applied only to the facts by which it has been ratified. This law has never been ratified by vital facts. There is no more justification for the application of this law to strictly vital facts than there is for the application of the Volstead Act, for the enforcement of the 18th Amendment to the Constitution of the United States, to the inhabitants of London.

Yet there is a school of psychologists who as-

sume that mental power is "energy" in the sense in which the word is used in the term "The Law of the Conservation of Energy," and upon this assumption they have constructed a system of psychology which denies all interaction between mind and matter.

Fechner based his system of psycho-physics on the assumption that the Law of the Conservation of Energy applies to matter as sentient no less than to matter as inanimate. Hence, he concluded, matter cannot act upon mind, nor mind upon matter. Otherwise the amount of energy in the universe would be increased or diminished. The only relationship which he considered possible between mind and matter is parallelism.

In the *Dogma of Evolution*, Professor Louis T. More shows from the standpoint of physics the absurdity of attempting to apply the Law of the Conservation of Energy to the operations of the mind:

> "To the long and disastrous list of errors to be found in Huxley and modern biologists we may add Spencer's categorical statement that the forces which we class as vital and mental are transformable and equivalent to the physical forces. In the first place, Spencer cannot distinguish between the ideas of force and energy; and in the second place, every physicist will deny this transformation and equivalence, on the ground that it is contrary to the law of the conservation of energy, since, until some one can show that thought is due to the positions of atoms, mental force is not in any sense a mechanical force."[1]

[1] p. 323.

> "The physicists use the word energy, and they mean just one thing, the combination of matter and motion, and they measure it in footpounds; the biologist has violently, and against their protest, seized on the word energy, and it sounds the same in our ears, but it is not matter in motion, and it is not measured in footpounds or in any other physical units; it is not conservative and it cannot be predicted. * * * And to make matters worse, the vicious use of the word energy by the biologists has encouraged the psychologists to go a step further and to use energy as an explanation of thought and emotion; and in this connection the word loses every particle of its original significance. I have never met the physicist who would admit the least connection between 'physical' and 'psychological' energy."[1]

Understanding the Law of the Conservation of Energy as we understand it, it not necessary to maintain, as Fechner does, that there is no interaction between matter and mind. The living organ is not mere matter. It is matter vivified by a vital principle. The same principle which animates the matter of the body is the principle of thought and volition. Material objects act upon the sense organs. The sense organs react, producing sensuous representations of the objects acting upon them. These sensuous representations are not products of the activity of mere matter, but of matter animated. Again, between sensuous and intellectual representations there is a parallelism, but a parallelism which results from the interaction of one power upon the other.

In our explanation there is no violation of the

[1] p. 249.

principle of efficient causality, which is a more firmly established principle than the Law of the Conservation of Energy, a principle which applies to products spiritual no less than to products material. Fechner's theory is a philosophy of the inadequate. He has an activity of something which he regards as mere matter, the organism, which has no adequate effect, since it produces no consciousness, and a mental parallelism with material activity, which has no adequate cause.

PROPOSITION IV

20. "The human soul originates by creation."

A substantial form can originate[1] in one of three ways—by eduction, by generation, by creation.[2]

The substantial form of inorganic substances, such as water, is educed from the potency of mat-

[1] "Now the mode of origin is not the same in all things, but in each is adapted to the nature thereof; animated things being produced in one way, and inanimate in another." (Q. XCIII. A. 5.)

[2] It might appear at first sight as if materialists should oppose this thesis. The proper point of attack, however, for materialists is not the creation of the human soul, but its existence. Holding as they do that man is merely a highly developed brute, there is no room for a spiritual soul in their theory. If the soul is to be admitted to be a spiritual, substantial principle, its origin can be rationally accounted for only by creation. The only alternative is to deny its spiritual and substantial character.

ter, and, when driven off by a succeeding form, returns to the potency of matter, whence it can again be educed by the operation of natural agencies.

The substantial form which animates the body of the brute results from the fertilization of the ovum of the female by the spermatozoa of the male.

How does the human soul originate? It cannot be educed from the potentiality of matter, for the form which owes its existence to eduction is totally dependent upon matter. Nor can it result from the generation of the animal body merely by the fertilization of the ovum by the spermatozoa, since the resulting form would likewise be intrinsically dependent upon matter.

The human soul, since it is intrinsically independent of matter in some of its functions, i.e., understanding and will, must be intrinsically independent of matter in its existence. Now it would not be intrinsically independent of matter in its existence, but rather intrinsically dependent upon matter, if its existence resulted from eduction or generation. Hence the soul must originate in some other way. St. Thomas gives his answer to the question very briefly: "Since, therefore, the rational soul cannot be produced by a change of matter, it cannot be produced save immediately by God."[1] (Q. XC. A. 3.)

[1] Creation is defined as "*productio rei ex nihilo sui et subjecti,*" i.e., the production of the entire substance of a thing, not by transformation from some other substances, but out of nothing.

Any elaboration of the proof given by St. Thomas is

It is not the origin of the human soul which has been a problem for those who recognize the spirituality of the soul, so much as the time of its origin. Does the soul originate before conception, after conception, or at the moment of conception? Each of these questions has been answered in the affirmative by some school of philosophers.

Plato held the theory that the human soul existed prior to its union with the body, which it was condemned to inhabit because of offenses committed in its previous existence.

"Origen held that not only the soul of the first man, but also the souls of all men were created

likely to obscure rather than illumine it. We might, however, for the purpose of concentrating attention upon its significance, ask, on the supposition that the human soul is not created but produced by transformation, what the substance is which can be transformed into a spiritual soul. Matter cannot naturally be so transformed. In so far as the Law of the Conservation of Matter is supported by evidence, it tells us that matter can be transformed, but only into some other form of matter. So far as our knowledge of spiritual nature is concerned, we can conceive how a spirit might begin to exercise a new function; but how it could be transformed into another spiritual substance, we cannot understand, since in every substantial transformation something substantial goes, something substantial comes, and something substantial remains. Nothing substantial can be taken from a spirit or added to it, since its substance is by nature simple.

Since, therefore, the human soul cannot be produced by transformation, it is clear that, to be produced at all, it must be produced out of nothing.

at the same time as the angels, before their bodies; because he thought that all spiritual substances, whether souls or angels, are equal in their natural condition. * * * Augustine, however, says that the soul of the first man was created at the same time as the angels, before the body, for another reason; because he supposes that the body of man, during the work of the six days, was not actually produced, but only as to some causal virtues (*causales rationes*)."[1]

In the same article St. Thomas gives his reason for rejecting the theory of the pre-existence of the soul: "If the soul is united to the body as its form, and is *naturally* a part of human nature, the above supposition is quite impossible."

It is St. Thomas himself who takes the second view, that the soul is created, not at the moment of conception, but after the fœtus has assumed the form of a human body. We shall give his exposition in his own words. The passage is found in *Of God and His Creatures,* a translation, of the *Summa Contra Gentiles,* by John Rickaby, S. J.:[2]

> "Therefore the active power which is cut off, or emitted, with the male semen from the body, and is called 'formative,' is not itself the soul, nor ever becomes the soul in the process of generation. But the frothy substance of the male semen contains gas *(spiritus),* and this gas is the subject on which the formative power rests, and in which it is inherent. So the formative power works out the formation of the body, acting in virtue of the soul of the father, the prime author of generation, not in virtue of the soul of the offspring,

[1] Q. XC. A. 4.
[2] p. 167 (Burns, Oates and Washbourne).

even after the offspring comes to have a soul; for the offspring does not generate itself, but is generated by the father. This is clear by the enumeration of the several powers of the soul.

"The formation is not attributable to the soul of the embryo itself on the score of that soul's generative power; for that power puts forth no activity till the work of nutrition and growth is complete; and, besides, its work is not directed to the perfection of the individual, but to the preservation of the species. Nor can it be assigned to the embryo's nutritive power, the work of which is to assimilate nourishment to the body nourished: for in this case there is no room for such a work; since nourishment taken while the body is in formation is not applied to assume the likeness of a pre-existent body, but goes to the production of a more perfect form and a nearer approach to the likeness of the father. Nor is the development of the embryo attributable to its own power of growth; for to power of growth there does not belong change of form, but only change in bulk. And as for the sensitive and intellectual powers, it is clear that theirs is no office bearing on such a development. It follows that the formation of the body, particularly of its earliest and principal parts, does not proceed from the engendered soul, nor from any formative power acting in virtue thereof, but from a formative power acting in virtue of the generative soul of the father, the work of which is to make another like in species to the progenitor. This formative power, therefore, remains the same in the subject aforesaid from the beginning of the formation even to the end. But the appearance of the being under formation does not remain the same; for first it has the appearance of semen, afterwards of blood, and so on until it arrives at its final completeness.

"Nor need we be uneasy in admitting the generation of an intermediate product, the existence

of which is presently after broken off, because such transitional links are not complete in their species, but are only in their way to a perfect species; and therefore they are not engendered to endure, but as stages of being, leading up to finality in the order of generation.

"The higher a form is in the scale of being, and the further it is removed from a mere material form, the more intermediate forms and intermediate generations must be passed through before the finally perfect form is reached. Therefore in the generation of animal and man—these having the most perfect form—there occur many intermediate forms and generations, and consequently destructions, because the generation of one being is the destruction of another. The vegetative soul, therefore, which is first in the embryo, while it lives the life of a plant, is destroyed, and there succeeds a more perfect soul, which is at once nutrient and sentient, and for that time the embryo lives the life of an animal; upon the destruction of this, there succeeds the rational soul, infused from without, whereas the preceding two owed their existence to the virtue of the male semen."

It is matter for wonder that evolutionists do not cite the latter part of this argument to prove that St. Thomas admitted evolution in principle. All they need do is to transfer his argumentation from ontogeny to phylogeny—from the development of the individual to the development of the race. It is true that he does not hold evolution in relation to phylogeny. But it is only necessary to extend the application of the principles, which he here enunciates, from the individual to the race, to secure a metaphysical basis for evolution in relation to the race.

St. Thomas holds with Aristotle that the rational soul is the entelechy of the body, the principle which has an end in itself and determines the specific nature of the body of which it is a constituent part.

There is no doubt that the human embryo passes through many stages in its development from the condition of a fertilized cell to that of a perfect human body.

But from the very moment that the ovum is fertilized, it is driving at a definite end—the perfect body of man. There must, therefore, be an entelechy in the fertilized cell. The fertilized cell of one animal is hardly distinguishable from that of another. Why is it that one develops into a mouse and another into a man? St. Thomas recognizes in the fœtus only a vegetative principle. The sentient and rational forms appear later and each in turn displaces its predecessor.

The sentient form, when it arrives, exercises the functions of vegetative as well as of sentient life, and the rational soul, besides exercising the functions of rational life, assumes the functions of the sentient and vegetative forms.

Since the rational soul is capable of exercising these functions in the developed body, evidently it should be capable of exercising them in the earlier stages of development—if it be present. There is no function which St. Thomas ascribes to the vegetative form which is displaced by the sentient, or to the sentient which is displaced by the rational soul, which could not be exercised by the rational soul, if present.

We cannot justify our assent to the proposi-

tion that there is a rational soul in the embryo by the same arguments which apply to the person who has attained the use of reason. If one has attained the use of reason, we ask him to use that reason to recognize the fact that there is a power in him capable of reasoning. That power we call the intellect. And we go on to identify this power with the root principle of all life in the body. Evidently we cannot apply this method with the embryo, or concerning the embryo, since it gives no evidence of consciousness. Our argument is, of necessity, like the argument of St. Thomas, a metaphysical argument. We are inclined to think that the rational soul exists in the fertilized cell no less than in the grown man or woman. Our reason is the one we have already given, that the fertilized cell, from the very moment that it is fertilized, is driving at a definite end—the perfect human body. Only vegetative functions are exercised at first, but those vegetative functions are concerned with the erection of the organs of sensation, upon which the rational powers will be dependent. If the man for whom a house is built, and by whom it is to be occupied, would naturally wish to supervise the erection of the building, so, speaking figuratively, must the rational soul be desirous of supervising the organic structure within which it must dwell, and upon which it must rely for the exercise of those functions which are to be its occupation.

The rational soul must ultimately assume the task of actuating the matter of the body so that it will grow and feel. Why should it delay to enter upon its task? There is nothing which the in-

ferior forms can do for it which it cannot do for itself. The question with which the bill-boards have made us familiar inevitably suggests itself: "Eventually! Why not now?" Why should not the rational soul animate the fertilized cell, since it must come to it sometime, in some stage of its development?

The solution of this problem has a practical bearing upon the life of the Catholic. In the Catholic Church the procuring of abortion carries with it the penalty of excommunication. The law of the Church upon this subject is thus stated in the *Summarium Theologiæ Moralis* by A. M. Arregui, S. J.:[1]

> "Occisio fœtus, vel abortus, voluntaria in se, seu directa actione vel intentione, numquam licet, nequidem in ectopicis conceptibus, et ad vitam matris extreme periclitantis salvandam";

which means that voluntary abortion, by direct action, cannot be procured even when the conception is ectopic and it is the only means of saving the life of the mother. The reason which he alleges to justify this law is that the fœtus possesses[2] a rational soul from the very moment of its conception, i.e., from the moment the ovum is united with the spermatozoa. Hence, to destroy the life which is in the fertilized cell, is, in the eyes of Church legislation, plain murder.

[1] no. 241.

[2] "Fœtus habet animam rationalem a primo conceptionis instanti, ac proinde jus ad vitam." (no. 240.)

PROPOSITION V

21. "The human soul is immortal."

When a student is asked to define immortality, he is likely enough to answer: That is immortal which cannot die. And considering only the etymology of the word, the answer is correct.

But when such a definition is given, the question at once suggests itself to the mind: Why, therefore, can we not predicate immortality of a stone or any other inorganic thing?

As actually used, immortality implies something more than incapability of dying. *It implies incapability of dying in something that lives.*

When we discuss the immortality of the human soul, we assume that the soul lives. We are justified in our assumption, because the definition of life is verified of the soul. *Life is the power of immanent activity.* We have seen that the soul has the power of immanent activity, that it produces its thoughts, that these thoughts remain within it and perfect it.

When, therefore, we set down our proposition, and affirm that "immortal" is a predicate which may properly be applied to the human soul, we mean that the individual human soul must naturally continue to exist forever.

This incapability of going out of existence need not, however, be absolute. The only being which is absolutely incapable of going out of existence is

the self-existing Being, in whom existence is identified with essence.

The immortality, therefore, which we predicate of the human soul is not absolute. It is the highest degree of immortality of which a mere creature is capable, and that is natural immortality, an immortality demanded by the laws of nature.

What reasons are there for thinking that the human soul will never cease to live?

Let us look around and see what it is that goes out of existence and how it goes out of existence.

A chemical compound, as such, goes out of existence when it is reduced to its elements. According to the hylomorphic theory the matter of the compound remains; but its substantial form is replaced by the substantial forms of the elements into which it has been resolved. Whether the interpretation of the change given by the hylomorphic theory be accepted or not, it must be admitted that the compound, as such, no longer exists when resolved into its elements. As a compound it has ceased to exist.

The human soul is not a compound like a chemical product. It is not a compound like a living body.

The chemical product can be decomposed. In the human soul there are no elements into which it can be resolved.

The constituent parts of the living organism can be sundered by death; the vital principle can be separated from matter. In the human soul there are no constituent parts. The human soul is substantial, but simple. It is not a compound of substantial constituents.

The human soul cannot, therefore, cease to exist, as a chemical compound can cease to exist, by decomposition.

The human soul cannot cease to exist as a living organism can cease to exist by the separation of constituent parts.

If it be urged that the human soul can go out of existence as does the animal soul on the death of the animal, the answer is that the human soul and the animal soul differ from each other in their dependence upon matter. The animal soul, whose powers are merely nutrient and sentient, is intrinsically dependent upon matter for the exercise of *all* its activities.

The human soul, on the contrary, while uniting with matter to constitute the human body, which is the subject through which the nutrient and sentient powers of the soul operate, is intrinsically independent of matter in the exercise of its rational functions.

While it is clear that a vital principle which is intrinsically dependent upon matter for *all* its vital functions will naturally go out of existence when it can no longer maintain its connection with matter, it is not clear that a vital principle which has some powers that are intrinsically independent of matter, will go out of existence when separated from matter. On the contrary, its natural independence of matter in some of its operations is a natural reason why it should continue to exist apart from matter.

There is only one other conceivable way by which it might go out of existence, and that is by annihilation.

Annihilation, as a mode of bringing to an end the existence of a substance which is naturally capable of continuing in existence, is not a matter of experience. No one has ever witnessed it. Yet it is conceivable.

The question, therefore, is narrowed down to this one point: Can the human soul be annihilated?

What is meant by annihilation? It means the reduction of something to nothing. It is the antithesis of creation. Since the result of annihilation is nothing, it cannot result from a positive act. Every positive act results in a positive effect. The effect of annihilation is negative; it is nothing.

It is impossible for us, or for any other finite being, to act and yet do nothing. When you act you are always doing something. Annihilation is, therefore, beyond our power, and beyond the power of any finite being.

Since annihilation results in the negation of an effect, it can be accomplished only by the Being who sustains the effect in existence. And it can be accomplished by Him only by withdrawing His sustaining power.

That it is within the sphere of absolute possibility for Him who sustains all things in existence to annihilate the human soul, is quite evident. It involves no contradiction in terms, and whatever involves no contradiction in terms is within the range of absolute possibility. The absolute possibility of annihilating the human soul is not a matter for debate. It must be conceded.

The only debatable form in which the question of the possibility of annihilating the human soul

can be stated must be somewhat as follows: Is it naturally possible for the human soul to be annihilated?

Natural possibility has not so wide a range as absolute possibility. Absolute possibility is limited only by such acts as would involve a contradiction in terms. Natural possibility is limited to the course which nature pursues. Nature has uniform modes of action which we have discovered by observation and which we call the "Laws of Nature." Natural possibility must keep within the laws of nature.

Would the annihilation of the human soul be consistent with the laws of nature?

Capability of action is the only test of capability of existence. Everything that is, can act somehow. If an object has no capacity whatever for action, it has no capacity whatever for existence.

Has the human soul, apart from the body, any capacity whatever for action? Yes. Even when united with matter it is intrinsically independent of matter in some of its operations. If the human soul is *intrinsically independent of matter in any of its operations, it must be equally so in its existence.* The human soul naturally demands union with the matter of the body for the beginning of its existence. It does not naturally require this union for the continuance of its existence. Since all its acts of rational consciousness are intrinsically independent of matter even when it is united with matter, it is only natural that it should be able to continue them apart from matter. And for how long? Forever.

If the Law of the Conservation of Matter has its analogue in the spiritual order, as it naturally should have, the annihilation of the human soul is not within the range of natural possibility. The human soul is therefore by nature immortal.

Kant thought[1] that as consciousness can diminish, so can existence along with it, until it entirely ceases.

Certainly it is within the range of absolute possibility that this should occur. But it is outside the range of natural possibility.

The task of providing the soul with something to think about belongs to Him who sustains it in existence. Not all the forces of nature are extremely active. But they all have something to do. If they do nothing else, at least they attract one another, and so maintain the cosmos. The Wisdom which finds employment for every tiny atom, can be trusted to provide employment for spirits which, by nature, are little less than the angels.

Professor James declares that the soul, when closely scrutinized, guarantees no immortality of a sort we care for.[2]

Even though we do not care for it, how are we going to escape it?

How can a spirit commit suicide? Professor James gives no answer to the problem which his opinion suggests, except by substituting for a substantial soul an insubstantial stream of thought. We have already classed this answer among the

[1] *Critique of Pure Reason*, Meiklejohn, Bk. II, ch. I.
[2] *Principles of Psychology*, vol. I, p. 346.

foibles of nursery life, and need not consider it here.

There are reasons why God should continue to sustain the soul in the existence which conforms to its natural powers. His justice demands that some reward be bestowed upon those who have observed His law, and that satisfaction be received from those who have violated it. Since divine justice is not satisfied in this world, some period of existence after death is required to satisfy it in the other world.

Those who attain to happiness in another world will naturally want to continue in existence forever. The failures, those who have omitted to take advantage of the opportunities life offers, may desire annihilation. But annihilation even for them would be outside the course of nature. If God were to annihilate them, He would not be acting consistently with the laws which He Himself has established for the government of His creatures.

All that can be known by reason about the Divine Will is only what can be learned about it from the study of nature. And nature offers no evidence to justify the belief that a substance which is naturally indestructible will ever be annihilated.

This argument must be viewed in its context. It is bound up with all the arguments that have preceded and with all that will follow. It cannot be isolated. It reaches out indeed beyond psychology into natural theology. For without the assumption that there is an infinite God to whom

all other things owe their existence, and who is capable of sustaining in existence the soul which is naturally indestructible, the discussion of the immortality of the soul is meaningless. The materialist, who refuses to recognize the existence of any substance besides matter, is perfectly logical in refusing to admit the immortality of the soul. There is no immortality of the soul if there is no God and no soul. But if it once be admitted that there is an infinite God, the Creator of all things, and that the soul of man is substantial and spiritual, it is difficult to see how there can be any escape from the conclusion that the soul of man is naturally immortal.

22. As we have followed St. Thomas in our interpretation of the nature of the soul, so we shall follow him in framing our definition of mind. And we shall adhere not only to his principles but to his language. Our definition, when given, must be considered in the light of its context. Not everybody understands the same word in the same sense. There are two words which appear in our definition, *subject* and *principle,* which the reader may have associated in his mind with meanings of his own. We are here using these words in the sense of St. Thomas. That the reader may see these words in their context we shall quote the passage in which they occur:[1]

> "The subject of operative power is that which is able to operate; * * * Now the same is that which is able to operate, and which does operate. Wherefore the subject of power is of necessity the subject of operation."

Since the human body,[2] by its activity, pro-

[1] Q. LXXVII. A. 5.

[2] The human body, as has been shown, is a compound of prime matter and substantial form. The substantial form of the human body is the human soul. When the soul, by death, is separated from the human body, the prime matter of the body is actuated by some form, or forms, which differ essentially from the human soul. The compound of prime matter with the form, or forms, which succeed the human soul, cannot be called a human body. The human body is a compound

duces sensuous consciousness, it is the "subject of operation." St. Thomas calls the body the subject of the sentient powers.

> "But some of the operations of the soul are performed by means of the corporeal organs, as sight by the eye, and hearing by the ear. And so it is with all the other operations of the nutritive and

of which the human soul is an essential constituent. The human body so constituted is essentially capable of the operations of vegetation and sensation. The human body is thus essentially a vegetative body, and a sentient body. It is this human body, essentially sentient, which by its activity produces sensuous consciousness.

Objection:

"The body is not the same as the composite of body and soul, and a man's body dead is still a man's body, in common language, as long as it retains the form of a body, or '*forma corporeitatis.*' "

Answer:

Our answer will be given in the words of Cardinal Mazella, "*De Deo Creatore*" (p. 261):

"According to Scotus, the body with the '*forma corporeitatis*' only, exists, subsists, is distinguished from every other body; indeed, after separation from the intellectual soul, the body would remain with the '*forma corporeitatis*' only, which Scotus admitted precisely to avoid the production of a new form in death."

On page 258 the Cardinal lays down his own proposition:

"Excluding the opinion of Scotus and of more recent philosophers, we assert that the human soul is the form of the body in the sense that it not only makes it a living body, but a body *(ut eidem det non modo esse viventis sed ipsum esse corporis).*"

The objection is based upon the assumption that the

sensitive parts. Therefore the powers which are the principles of these operations, have their subject in the composite, and not in the soul alone."[1]

The subject of operation is that which is able to operate and does operate. To be able to operate, the subject of operation must possess power. The subject of operation is, therefore, the subject of power.

To operate is to produce an effect of some sort. Effects are various. But whatever it is that produces the effect is the subject of the power by which the effect is produced.

Locomotion, growth and feeling are effects produced, as we have already shown, by the activity of the human body. Hence, the human body is the subject of the powers of locomotion, growth and feeling, and the subject of the effects produced by the operation of these powers.

The reader is requested to observe the language of St. Thomas very closely:

theory of Scotus is an established truth. This we are not prepared to admit.

Something of the same confusion concerning the meaning of "human body" reigns in the minds of the biologists of today:

"Now the biologists have invaded the world of the physicist. They have invented a family tree, connecting themselves genealogically with the physicist. They call themselves biophysicists and biochemists and claim a blood relationship. But they are not so related; when they are studying living phenomena, they are biologists; and when they are studying the same bodies from which life has been killed, they may be physicists; but they cannot be both." (Professor More, *The Dogma of Evolution,* p. 248.)

[1] *Ibid.*

> *"Some of the operations of the soul are performed by* means of corporeal organs, as sight by the eye. * * *"

The act of vision is called by St. Thomas "an operation of the soul." It is not called an operation of the soul as its subject, but as the primary principle of the power by which the act is produced. The body is the subject of these operations. It is in the body that the power exists. The body is a material substance. A material substance, merely as material, has no power of sensation. If a material substance has the power of sensation it must, therefore, be indebted for that power to something which is not matter. *It is because of this indebtedness of the body, a material substance, to the soul, for the power by which it is able to feel, that St. Thomas speaks of acts of sensation as "operations of the soul."*

St. Thomas makes a distinction between the subject of operation and the principle of operation. He also distinguishes between the proximate and the primary principle of operation.

To obviate a possible misunderstanding it might be well to remark here that the sentient body is sometimes spoken of as the "adequate principle" of sensation. Instead of calling the sentient body the "adequate principle" of sensation, St. Thomas calls it the "subject" of sensation.

The "subject of sensation" is merely another name for what some call the "adequate principle of sensation."

Neither the proximate principle nor the primary principle is the "adequate principle."

It is important, especially for the reader who

is accustomed on all occasions to associate "adequate" with "principle," to observe that when we speak either of the "proximate" or the "primary" principle, we are not speaking about the "adequate principle." "Adequate principle" is synonymous with "subject of operation"; and the "subject of operation" is clearly distinguished both from the proximate and the primary principle.

The proximate principle of operation is the power by which the act is performed. Some of the proximate principles are powers of the soul as their subject. The intellect, which is the proximate principle of intellectual acts, and the will, which is the proximate principle of volitional acts, are powers which have the soul for their subject. The powers of sight, hearing, smell, taste, touch, which are the proximate principles of the corresponding acts, have their subject in the sentient body. No single power is the proximate principle of all our conscious acts. There are many proximate principles of operation, some of which belong to the sentient order of powers, others to the rational order.

The primary principle is that to which the subject owes its power. While the proximate principles of operation are many, the primary principle is one for all the powers of man. There are two subjects of operation in man, the soul and the composite; but there is only one primary principle of all the powers of both subjects. Thus, the powers may be viewed in relation both to subject and to primary principle. Each power

is at once a power of a subject and a power of the primary principle:

> "For the soul is the primary principle of our nourishment, feeling, and local movements; and likewise the primary principle whereby we understand."[1]
>
> "All the powers are said to belong to the soul, not as their subject, but as their principle; because it is by the soul that the composite has the power to perform such operations."[2]
>
> "All such powers are firstly in the soul as compared to the composite, not as in their subject, but as in their principle."[3]
>
> "Some of the operations of the soul are performed without a corporeal organ, as understanding and will. Hence the powers of these operations are in the soul as their subject."[4]
>
> "It is manifest that not every principle of vital action is a soul, for then the eye would be a soul, as it is the principle of vision; and the same might be applied to the other instruments of the soul, *but it is the first principle of life which we call the soul.* Now, though a body may be a principle of life, as the heart is a principle of life in the animal, *yet nothing corporeal can be the first principle of life.* For it is clear that to be a principle of life, or to be a living thing, does not belong to a body as such; since if that were the case, every body would be a living thing, or a principle of life. Therefore a body is competent to be a living thing or even a principle of life, as such a body. Now that it is actually such a body, it owes to some principle which is called its act. Therefore the soul, which is the first principle of life, is not a body, but the act of a body."[5]

[1] Q. LXXVI. A. 1.
[2] Q. LXXVII. A. 5.
[3] *Ibid.*
[4] *Ibid.*
[5] Q. LXXV. A. 1.

One who does not accept the philosophy of St. Thomas can refuse to admit that the soul is the primary principle of all the powers of man. *But no one, whether he accepts the philosophy of St. Thomas or rejects it, can deny that St. Thomas teaches that the one soul in man is the primary principle of all his powers, locomotive, vegetative, sentient, and rational.*

There is no power of man which is not a power either of the body or of the soul as its subject. Those same powers are powers of the soul as their primary principle.

While our declaration is contained in the clear and simple statement of St. Thomas, his meaning is likely to be overlooked, and is frequently overlooked by the unobservant reader. Hence the stress which we lay upon it.

We are not proving here that the soul is the primary principle of all our powers. We hope that we succeeded in demonstrating this truth in the preceding sections of this Part. We are here merely preparing the terms which we wish to employ in giving our definition of mind. As we have taken St. Thomas for our guide in developing our ideas of how man is constituted, so we desire, in giving our definition of mind, to set it forth in the terms which St. Thomas employs. If the reader has grasped the significance of the scholastic argument, he cannot fail to realize the propriety of calling the soul the primary principle of all our powers. And to say that the soul is the primary principle of all our powers is merely another way of stating that all our powers are powers of the soul as their primary principle.

We do not say that the soul is the "adequate principle" of all our conscious acts, but that it is the "primary principle" of all our powers. All our acts of sensuous consciousness are produced by the sentient body. *The body is called by St. Thomas the subject of these acts, the soul the primary principle.*

If we return for a moment to the definition of mind given in the *Century Dictionary,* we shall understand what verdict we must pronounce upon it:

> "Mind, that which feels, and thinks and wills; the conscious subject."

According to St. Thomas, there are two subjects of consciousness, the composite, or sentient body, and the soul alone:

> "Wherefore the subject of power is of necessity the subject of operation."

The sentient body, which is the subject of the sentient powers, operates to produce sensuous consciousness. The soul, which is the subject of the rational powers, operates to produce rational consciousness.

Hence, "conscious subject" is not a good definition of mind, according to the terminology of St. Thomas.

"Conscious subject" is a good definition of mind in the philosophies of Plato, Descartes and Berkeley, each of whom recognized all states of consciousness as states of soul only.

"Conscious subject," as a definition of mind, is consistent with sensationist philosophy which

recognizes only one subject of consciousness, the sentient body.

"Conscious subject" is not a good definition of mind according to the philosophy of St. Thomas. "Conscious subject," as a definition of mind, implies that all consciousness is found in one subject. St. Thomas recognizes not one subject of consciousness, but two, the sentient body, and the soul alone. Hence, "conscious subject," as a definition of mind, is, in the philosophy of St. Thomas, an unsatisfactory definition.

Mind, as defined by the *Century,* is coextensive with consciousness, in the sense that every state of consciousness is a state of mind.

How can we define mind in the terminology of St. Thomas and give it all the latitude which it has in the *Century* definition?

As coextensive with consciousness, mind signifies a two-fold subject, the sentient body, and the soul. Sensuous consciousness is the product of the activity of the sentient organism. Rational consciousness is the product of the activity of the soul.

If we consider consciousness from the standpoint of principle, we must distinguish between the proximate and the remote. The power by which the conscious act is produced is the proximate principle, the soul is the primary principle.

The sensuous act owes its existence to the soul only as to the primary principle of sentient power. It does not owe its existence to the soul as its subject. The act of rational consciousness, on the contrary, owes its existence to the soul, both as

the subject and primary principle of the rational powers.

To some acts, not to all, the soul has the relationship of both subject and principle. To all it has the relationship of principle. We cannot say that the soul is subject *and* principle of all our conscious acts.

Definition of Mind.—Hence, defining mind in terms[1] of soul, we can say that *the mind is the soul as the subject of some, and the primary principle of all, of the powers by whose activity consciousness is produced.*

A definition of mind in terms of subject would have the advantage of emphasizing the distinction between the subjects of the producing powers.

The definition of mind in terms of soul has the advantage of emphasizing unity of consciousness, which to psychologists is one of the most perplexing of mental phenomena.

Conscious acts are bound together into a sort of mental bundle. William James considered that to be the binder of conscious acts was the only purpose a soul could serve. Substituting "the passing thought" as the binder, he discarded the soul.

But conscious acts must be produced before they are bound together. James has no explanation of their production. St. Thomas accounts

[1] Acts of consciousness involve processes, products, powers, subjects, principle. "Mind" can be, and is, defined in terms of any one of these factors, or any combination of them. Our definition of mind in terms of soul involves subject and principle. Practically, what our definition of mind amounts to is a statement of the relations of soul to consciousness. As having these relations we call the soul the mind.

for their production by the activity of powers of which the soul is the primary principle. The binding of these acts into a unified system is a natural consequence of unity of principle. The explanation of James involves the rejection of the principle of efficient causality. The explanation of St. Thomas accounts for unity of consciousness, while giving due recognition to the principle of efficient causality.

Descartes, by attributing all consciousness to the soul as its subject, recognizes the principle of causality and the fact of unity of consciousness. Spencer, by attributing all consciousness to the sentient body, recognizes the principle of causality and the fact of unity of consciousness. But by attributing all consciousness to a single subject, each in his own way obliterates all difference between sensuous and rational consciousness. The subject of consciousness recognized by each of these philosophers is only fifty per cent adequate to the effect to be produced. For one hundred per cent adequacy it is necessary to effect a union of the two subjects. St. Thomas recognizes the existence of the two subjects of consciousness, and brings them into union with each other through the soul, which is the primary principle of all the powers of both subjects.

An objection to the use of "mind" as coextensive with consciousness.—To employ the word "mind" as coextensive with consciousness is to accept the psychological theories of those who employ it in this sense.

Since we cannot accept their theories, we should

not accept their use of the word "mind" as coextensive with consciousness.

Answer: Since the word "mind" is employed as coextensive with consciousness by philosophers who hold such opposite views as Berkeley, Descartes and Bain, evidently this use of the word "mind" does not imply the truth of any particular theory concerning the nature of the mind.

All of them agree to call all states of consciousness states of mind, whatever mind may be. It then remains for each to declare what he understands by it.

Berkeley understands by mind a spirit which is not associated in any way with matter, except as an idea; Descartes understands by mind a spirit locally conjoined with matter; Bain understands by mind an aspect of nervous activity.

Bain does not surrender his view of the nature of mind to Berkeley, nor does Berkeley surrender to Descartes, by consenting to employ the word "mind" as coextensive with consciousness. Nor do we surrender our view of the nature of mind by giving to the word "mind" the same extension which is given to it by nearly all schools of psychology.

We certainly require some name for that to which we attribute all states of consciousness. We say "I think," "I feel." The "I" is coextensive with thought and feeling. What name shall we give to the "I" *as* capable of both thought and feeling? "Intellect," "Sense," will not do. Neither term signifies that which is coextensive with the whole field of consciousness. The range of each separate mental power is lim-

ited to a part of the entire field of consciousness. What name shall we employ to signify *that which is* coextensive with the entire field of consciousness? "Intellect" is too narrow. "Sense" is too narrow. "Soul" is too broad, embracing the vegetative as well as the sensuous and rational life. If we employ "mind" to signify "intellect" only, we shall have two names for the same power, intellect and mind.

Consciousness is a state—of what? "Mind" is the term employed by nearly all psychologists today to denote that of which consciousness is a state.

Why should we not employ the language of the age in which we live, when we can do so without surrendering one jot or tittle of the principle for which we stand?

Our definition, taking consciousness as coextensive with mind, declares what the mind is. All who recognize the existence of the soul must recognize that every state of consciousness has some relation to it. The soul, according to the philosophy of St. Thomas, is related to rational consciousness as the principle and subject of the powers by whose activity rational consciousness is produced. It is related to sensuous consciousness as the principle of those powers by whose activity sensuous consciousness is produced. As having these relations to consciousness, we call the soul the mind. The mind is not a mere relation. Nor are mind and soul synonymous terms. The mind is the soul as having particular relationships, the relationship of principle to all the pow-

ers by which we become conscious, and the relationship of subject to some of them.

No one who admits the existence of a substantial soul denies that it is the subject of our powers of rational consciousness. Descartes makes the words "mind" and "soul" synonymous. We refuse to take these words as synonymous. The powers of rational consciousness have the soul for their subject. All the powers of consciousness have the soul for their primary principle. But the powers of consciousness are not the only powers of the soul, as understood by St. Thomas. Hence, mind and soul are not recognized by us as convertible terms.[1]

[1] "It may be said at once that no English word can fully represent what Aristotle meant by psyche. * * * 'Mind' means less than Aristotle's expression meant in Greece. We talk of the 'mind' of animals, but scarcely of the 'mind' of plants; and yet it is to plants as well as to animals that the Aristotelian term has to be applied. * * * The 'soul' of a plant and the 'soul' of a man are alike the central vivifying element in each." (*Aristotle's Psychology*, Wallace, XLVIII.)

23. In Baldwin's *Dictionary of Philosophy and Psychology,* faculty is defined as "capability for a certain kind of mental process." He continues:

> "But we find in many of the earlier psychologists a tendency to treat faculties as if they were causes or real conditions, of the states or processes in which they are manifested, and to speak of them as positive agencies interacting with each other. Thus, persistence in voluntary decision is said to be due to extraordinary strength of will, or to will power, or to the faculty of will. Certain mental processes in man are said to have their source in the faculty of reason, and certain other processes in lower animals are explained by the existence of a faculty of instinct. This mode of pretended explanation has received the name of 'Faculty Psychology.' Locke in criticising the phrase 'freedom of the will' has brought out very clearly the nature of the fallacy involved. 'We may as properly say that the singing faculty sings, and the dancing faculty dances, as that the will chooses, or that the understanding conceives; or, as is usual, that the will directs the understanding, or the eye obeys, or obeys not, the will; it being altogether as proper and intelligible to say that the power of speaking directs the power of singing, or the power of singing obeys or disobeys the power of speaking."

It would certainly be a grave error to hypostatize the powers of the mind, and to conceive them as forming a sort of mental commonwealth, each with its own individual existence, but acting and reacting upon one another, as citizens do in a state. "*Actiones sunt suppositorum*" is the old

scholastic axiom. Actions are to be attributed to complete and independent substances. It is the person who thinks, wills, speaks, sings, dances, etc. Yet, to sing, one must have the power to sing. There are some persons who can sing, and others who cannot. The power to sing must be something. It cannot be a mere nothing, or there would be no difference between the person who can sing and the person who cannot. There must similarly be in the person who performs any action whatever, the power to produce that action, or he would not produce it. And if we are to speak about that power, we must have a name for it. Thus, we speak of the intellect as the power to produce abstract thought. And if there is an interaction of one mental phenomenon upon another, as of knowledge upon choice, we refer the interaction to the intellect and the will. No amount of philosophizing will get these phrases out of the language: "my judgment tells me this should be done"; "your common sense should have warned you." The "Faculty Psychology" is undoubtedly the psychology of the ordinary man and woman. It is the human mode of speech. What we must do, is to penetrate within these wrappings of thought until we seize upon the truth which they enclose.

Our ordinary phrases, interpreted in the light of the definition of faculty given in the dictionary, express sound psychological thought.

"Capability for a certain kind of mental process" expresses adequately enough our notion of mental faculty. Each of us is capable of certain processes, which even Locke would call processes of the mind. We distinguish those processes

from one another by the effect which they leave upon our consciousness, and by their outward manifestations. Of course if one wished to be captious he might quarrel with this use of the word "consciousness," as Locke does with "faculty." Thus, one might argue that "consciousness" is not a sort of table on which articles can be "left," and "processes" cannot "leave" anything anywhere. Our language is derived from sense experience, and when we are speaking of the immaterial, we employ the same terms which we use when speaking of the material, for the very simple and sufficient reason that we have no other terms to use. We may, therefore, proceed to employ language as best we can, to explain our notion of faculty.

We distinguish one process from another. They are all *our* processes. But, because they differ from one another, we must have some name for them. Some of our acts we call "mental processes." Some mental processes are like one another; others are of a different character. We must have some name to distinguish processes that are alike from those that are different. Hence, "acts of the intellect" and "acts of the will," if for no other reason than to be able to speak about them. Then, we know that we do not perform acts without having the power to perform them. To the power by which we perform them we give a special name. Why not? We cannot converse about our acts without speaking of the power by which we perform them.

When we examine into those acts carefully, we usually find that they are somehow associated with a definite organ.

Our power to see, to hear, to taste, to smell, each is associated with a definite organ. Our power to experience pressure is common to nearly every part of the body. Even the power to think is associated with the brain. If a man retains his brain, he can still think, even if he has lost his little finger. But if he loses his brain, his little finger cannot be used as a substitute for the work of thinking. Thus, we not only have different mental acts, but we ascribe those acts to different powers, and we perceive that those powers are associated with different parts of the body.

We know, too, that the power by which we perform these acts is something different from a mass of chemical molecules. The corpse which we bury is a mass of chemical molecules; but all the acts which it performed while a living body have ceased; it is no longer capable of seeing and hearing. In other words, it has lost something real, and that real thing which it has lost, possessed capabilities, powers.

Of course it would be a mistake to suppose that those powers were independent realities, like molecules. A power always belongs to something. That thing to which the power belongs, is said to have the capability of acting in a particular way. If it is capable of acting in several ways, that same thing is said to have several capabilities or powers. Now, if you will substitute faculty for capabilities and powers, you will understand what is meant by faculty. *By a mental faculty is meant the mind's capability of performing a particular function.*

What functions can the mind perform? Let us put the question in another way: By what acts

is consciousness produced? In answering this question we can employ both the subjective and the objective method. We know that by using our eyes we see, by using our ears we hear, and that by using other organs we smell, taste, feel. We know that we think; we can add up a column of figures. We know that we choose; we decide whom we shall invite to our party. And we judge that others see, hear, smell, taste, feel, by the manner in which they act. We judge that they think, from their conversation; and that they choose, from the companions with whom they associate, the entertainments they attend, the sort of dress they wear, and, in general, from their conduct.

Thus, the one mind which each of us possesses, the one principle of all our conscious states, has a multitude of capabilities. In other words, it has many faculties.

Some of these faculties are sensuous, others are supra-sensuous. Some of the capabilities, or faculties, of the mind are exercised through the medium of the bodily organ, such as the faculty of sight, of hearing, of taste, of smell, of feeling, of imagining. Other capabilities, or faculties, are supra-sensuous, that is, they are intrinsically independent of the organism, as you will understand if you look back to our development of Proposition III.

What more need be said on this subject? It is not necessary here to demonstrate that there is in the human body some principle of life distinct from mere matter. We demonstrated that, in discussing Descartes' answer. And why suppose that there are several such principles of life

in the body? That would almost bring us under the awful ban which Locke pronounced upon those who hypostatize power. No; one principle of life is all that we need admit; but we do need that one principle of life. And that one active principle of all life in man, we call the soul. It is in virtue of the union of this one principle of life with the matter of your body that you are able to grow and to feel. The power which this principle imparts to the body, and by which the body is enabled to grow, is not a subject which we must discuss under "Faculties of the Mind," because the power of growth is not a mental power.

The power of growth is, however, a very important power in its relation to the mind, because it is due to the power of growth in the body that the organism is developed upon which the sensuous powers of the mind depend for their operation. Without the power of growth there would be no sense organs, without sense organs no sensation, and without sensation the powers of thought and of choice would have no source from which to derive the subjects for their activities. Thus, the powers of growth and sensation, of thought and volition, are closely linked together; so much so, that when we speak of mental power we are guilty of an abstraction. We are separating in thought things which in nature are united. Locke abhorred the hypostatizing of powers. We are in absolute agreement with him. Man is one thing, not a collection of things. But in man we find two elements, matter and a principle of life, which *we* call the soul. Locke might admit the existence of the soul in some sense, but not as one of the constituents of man's body. We regard

man as a unit, but a composite unit, composed of two real elements, one of which is matter, the passive element, the other the active element, the soul. It is that one soul, a real, substantial principle, which, in our opinion, is the active source of all the power in man. It is that one soul which animates the matter of the body and makes it a growing, feeling mass of matter. It is that same soul which thinks and wills. We have eliminated all the hypostases to which Locke objected, because we ourselves object to them. *We have man left,* man a composite unit, with a multitude of powers issuing from the single active principle of all life within him. *Those powers which reveal their presence by what we term mental acts, whether sensuous or supra-sensuous, are what we understand by the mental faculties.*[1]

[1] "Though Plato raises the question whether each of these functions be separate or whether it be with the whole soul that we are engaged in each particular application, his general exposition tends to regard the three as *separate and independent entities,* so that we think with one part, desire with another, and show spirit with a third part of our mental organism." *(Aristotle's Psychology,* Wallace, XXXVII.)

"Faculties to Aristotle are thus not different 'parts' into which soul is actually divided, but only different sides or aspects of mental action. In opposition to the Platonic psychology which had seemed to draw a fast line between the members of its division, Aristotle views the partition of the soul into faculties as merely a convenient application of abstraction. And thus his faculties are not separable in actual fact or actual locality; the partition is one which rests simply on a difference in their mode of working, on the point of view from which they are regarded; it is in short a distinction, not a division." (*Ibid.* LII.)

24. Plato, Berkeley and Descartes each identified the personality of man with his soul, or mind, as they understood these terms, since that is all there is to him, according to their views. Plato and Descartes both recognized the existence of the body, but not as entering into an intrinsic union with the intellectual soul.

William James identified the personality of the thinker with the passing thought: "If the passing thought be the directly verifiable existent which no school has hitherto doubted it to be, then the thought itself is the thinker."[2]

The opinion of James concerning the self, or the person, is consistent with the other parts of his philosophy, which we have sufficiently discussed.

Scholastic Definition—Scholastics define person as a "rational supposit." By "supposit" they understand a complete substance not intrinsically subordinated to a higher substance. A "rational supposit" is such complete substance endowed with intelligence.

Applying this definition to man, scholastics hold that both body and soul enter into the constitution of the person, since the substance of man consists of matter and soul bound together by an intrinsic union. Man is a supposit, a compound of matter and soul, which combine to form the

[2] *Principles of Psychology,* vol. I, p. 401.

human organism. Man is a rational supposit, since he is a complete, independent substance endowed with intelligence.

The only complete human substance in which scholastics do not recognize a human personality, is the substance of our Lord Jesus Christ, whom, as Christians, they believe to be the God-Man. They recognize in Him a perfect human substance; but because they also recognize that that human substance is intrinsically subordinated to the Divine Personality of the Second Person of the Blessed Trinity, they do not ascribe to Him a human personality.

Apart from revelation, of course, they would not know anything about such a union, as a fact. Theology, which deals with revelation, turns this fact over to philosophy as a problem, and philosophy, using reason alone, recognizes the possibility of such a union, and, in its definition of "supposit," makes provision for such exception.

Scholastics do not recognize the discarnate spirit after separation from the body as a person, since such a spirit, while subsistent and rational, is not a complete substance. The complete substance is man, composed of matter and spirit.

Scholastics recognize personality in the inarticulate infant no less than in the wisest philosopher. The physical, intellectual, social, moral attributes of the person undergo modification with the years, but the person is one throughout. Man does not lose his personality by sleep, insanity, suspensions or alterations of consciousness, for through them all he remains one complete substance, endowed with reason. As the dynamo is

a dynamo, whether at rest or in motion, so is man a person whether conscious or unconscious, so long as matter and soul remain united in the constitution of his complete human substance.

In scholastic philosophy the rational soul is not regarded as the single constituent of personality. But the rational soul is the element which gives the specific character to the supposit which is man.

INTRODUCTION
to
Parts III and IV

Phenomenal psychology has, as the object of its study, mental facts considered in view of their nature, origin, functions and relations to one another. If the "scientific" psychologist were absolutely true to his protestations, he would avoid all discussion of what the mind is; he would not even assume the truth of any system of rational psychology. But such attachment to the subject under consideration, and detachment from every other subject, appears to be a practical impossibility. Almost inevitably, consciously or unconsciously, the writer lapses into the assumption of some system of rational psychology.

Thus Mr. James Sully (1842—),[1] in his definition of "concept," assumes the "Sensationist" interpretation of mind:

> "A concept is a representation in our minds answering to a general name, such as soldier, man, animal. What is in my mind is a kind of composite image, formed by the fusion or coalescence of many images of single objects, in which individual differences are blurred, and only the common features stand out distinctly."

A concept, therefore, is some sort of "image," according to Mr. Sully. What, then, does he understand by "image"?

[1] *Outlines of Psychology*, p. 339.

> "* * * the percept is in a manner retainable. The form in which it appears, after the removal of the object, is known as a mental image, or representative image."

Thus, a concept is a species of image, which is a species of percept, which is a sense product. Throughout his book Mr. Sully carries, as the substratum of all his explanations of mental phenomena, the assumption that they are only sensuous phenomena. He is not, however, constantly thrusting this assumption before the gaze of his reader, though it is always present. He explains many mental phenomena very well, treating them precisely as phenomena.

But of such phenomena as the formation of the concept and of choice, he naturally has a very imperfect explanation. He can hardly be said to be justified in his assumption that the sensationist explanation of mind is correct, especially since he sets it down on the very first page that "As a science psychology is concerned only with the phenomena of the mind."

The discussion, in the preceding Part, of the philosophy of William James, makes it clear that it is practically impossible for a psychologist to write a book on phenomenal psychology without assuming some system of rational psychology; also, that phenomenal psychology, apart from rational psychology, is "*no science.*"

Having stated our views on rational psychology, and our reasons for them, we feel that we are justified in assuming, as established, a definite system of rational psychology. The "Faculty Theory" is an integral part of that system. Un-

der the various faculties we shall group all the phenomena of our mental life, showing their origin, their functions, and their relations to one another.

The structure of the human body and the functions of its organs are treated specifically in books on anatomy and physiology. Psychology assumes some understanding of these subjects. If a student of psychology takes his subject seriously, he will provide himself with the books on the collateral subjects which will help to an understanding of psychology. It is unnecessary, therefore, to clutter a book on phenomenal psychology with facts taken from other sciences, when those facts can be seen, in their proper context, in books that are easily procurable. A few of the essential facts, however, of anatomy and physiology will be given for the sake of convenience.

Phenomenal psychology is probably the most interesting of all the subjects known to man or woman. It is probably more interesting to women than to men. It is not, however, the phenomenal psychology of our text-books which is so absorbing. It is the phenomenal psychology of actual life.

Mental phenomena, as associated with individuals or with classes, are the basis of our most interesting literature. Novels that hold the imagination are occupied not so much with things as with minds. What does the heroine feel, think and will? How did these feelings, thoughts and volitions arise? The novelist, having aroused curiosity upon these subjects, proceeds to satisfy it.

But the study of mental phenomena which the novel-reader pursues is associated with the individual; an imaginary individual, it is true, but still an individual. This individual appeals to the imagination of the reader; the emotions of the reader are swayed by the fate of the hero or heroine.

It is this contact with the individual or the class, which is accompanied by an emotional reaction, which makes the study of the mental phenomena of the individual or the class so absorbing.

It is this emotional reaction which people seek in their conversations with one another and about one another.

Our general attitude towards the mind is very much the same as our attitude towards our automobile. The important questions are: How can we get some good out of it? Whither will it carry us? If a mishap occurs to it: What happened? How did it happen?

Most of us are satisfied to be carried in our automobiles. We have some notion that the automobile will not go unless a certain "explosion" occurs; but just what an "explosion" is, we probably do not know. Even if the explanation were given us, it is doubtful if we could carry it in our minds for a week's time.

It is not the interior working of the automobile that interests us, so much as the results of that working. If it enables us to catch a train, to visit a friend, or to make a trip through pleasant scenes, we are pleased. We leave it to the manufacturer to produce it, and to the mechanic to

repair it. We are interested chiefly in using it.

So is it with the mind. Whatever the mind may be, each of us has one. We did not make it, though we can modify it. It is a part of ourselves. What interests us about the mind is the use we can make of it. One of the uses we can and do make of it is to study mental phenomena as associated with individuals or classes. This is one of the most interesting uses we can make of it.

But our study of mental phenomena in relation to individuals is rarely scientific. Science is an assemblage of universal truths. Universal truths have all individuality squeezed out of them.

A scientific study of mental phenomena, therefore, cuts the mind off from the very elements which give them their intense human interest—their individuality. Psychology as a science is occupied with abstractions, which have, indeed, a foundation in reality, but which are in themselves, nevertheless, abstractions. Abstractions are of general interest only when they have, or threaten to have, an actual bearing upon life.

Psychology, therefore, considered as a science, is not a subject of general interest. Particular applications of psychological principles to actual life may, however, especially when accompanied by happy illustrations, arouse deep interest. People are interested in self-improvement; and, no matter what sort of "scientist" furnishes the directions, if the "science" promises results, people will listen—and pay. In such instances their interest is personal, not scientific. They want to know something which is scientific so as to have a better understanding of themselves.

Their object is themselves. What science they take, they take because of themselves, not because of the science. Any other advice which promised equally good results would be equally acceptable. They do not advance science; they apply it, under direction.

Phenomenal psychology can be indefinitely divided according to the particular class of mind under consideration. There is the Psychology of the Infant Mind, in which the mother and the nurse must be recognized as the only real experts; the Psychology of the Elementary School Mind, the Psychology of the High School Mind, and of the College Mind, in which the teachers are the experts. Then there is the Psychology of the Politician, of the Business Man, of the Laborer, of the Physician, of the Criminal, and of innumerable other classes. The expert psychologist in every case will be some one who is closely associated with the class. Thus, the detective makes it his business to study the mental processes of criminals so as to be able to trace a crime to its author.

Abstract phenomenal psychology prescinds from all that is peculiar to individuals and to classes and concentrates upon what is common to all minds, in greater or less degree, according to their development. It does not derive its facts, to any extent, from infant or child mentality. It takes as the object of its study the mature mind of the normal person. Assuming that he himself has a normal mind, the psychologist can apply both the subjective and the objective method to the facts of the mind.

It is the abstract phenomenal psychology of the mature, normal mind which will be developed in Part III and Part IV.

In Part III we shall present phenomenal psychology of the sensuous order; and in Part IV phenomenal psychology of the rational order.

PART III

THE PHENOMENA OF THE SENSUOUS ORDER

Sensation and Perception

25. The Nervous System.—There are some buildings so completely equipped with the "Burglar Alarm" system that, once it is set, the opening of a door, or the raising of a window in the building, will sound an alarm bell at police headquarters, or at the detective bureau, summoning the guardians of the peace to the protection of the inmates and their property.

Comparatively few buildings possess this equipment. It is too expensive for general use. But man, and the higher brutes, all are equipped by nature with a system of nerves which are literally connected with the head-quarters of the animal, and automatically report any impression made upon them, whether promising benefit, threatening destruction, or proclaiming the neutrality of the indifferent.

A few facts taken from anatomy and physiology concerning the structure of the nervous system and the functions of its several parts may be of service here.

Nerves consist of nerve-centers, which are said to be the originators of nerve-force, and of nerve-fibers which are the conductors of it. Nerve-force travels rapidly, but not so rapidly as electricity.

The nerves of the body are united into two

different systems, the sympathetic and the cerebro-spinal.

The sympathetic system operates the muscles over which the will has no control. The operation is automatic, and does not ordinarily produce consciousness. These nerves are found in all parts of the body, except the limbs.

The cerebro-spinal system operates the muscles over which we have control. We are, or can be, conscious of these operations. These nerves are found in all parts of the body.

The cerebro-spinal system reacts in various ways upon the sympathetic, at times causing a temporary paralysis. The action of the heart can thus be affected by a mental state.

The nerves of the cerebro-spinal system have a twofold function, to produce sensation and motion. Those producing sensation are called sensory or afferent nerves; those producing motion are called motor or efferent nerves. The sensory nerves operate automatically when affected. The motor nerves are ordinarily under our control.

The spinal nerves, after passing through the spinal canal, connect with the brain, which consists of the cerebrum, the cerebellum, and the medulla oblongata. When the nervous impulse has been transmitted along the sensory nerves to the brain, consciousness is aroused.

Every normal human body possesses five generically different sets or groups of external sense organs,[1] eyes, ears, nostrils, palate and surface of the tongue, and the papillae beneath the sur-

[1] For a description of the special organs of sensation, see any book on anatomy and physiology.

face of the skin. The nerves of each of these organs are connected with the brain by a fiber, or set of fibers, which transmits impressions to the brain. After the message has reached the brain, if the mind decides to act, it can communicate a message to the muscles by means of the efferent, or motor, nerves.

The organs are affected by five generically different sorts of stimuli. Vibrations of ether reflected from a body affect the eye; air waves set the powers of the ear in motion; soluble matter in the mouth affects the papillae of the tongue and palate; volatile particles of matter in the air affect the nasal organs; pressure, heat and cold affect the organs of touch. Throughout the body there is a system of nerves whose operations are included under the general name "Touch,"[1] which are subject to modification by the internal conditions of the body, and report to the mind when the modification is sufficiently intense to set them in motion.

[1] The sensations included under "Touch" may be grouped under four headings: organic sensations, sensations of temperature, touch proper, and muscular sensations. The organic sensations inform us of the good or ill conditions of the body, and are of great importance as guardians of health. The sensations of temperature inform us of the temperature of the surrounding medium, or of the body which comes into contact with us. Touch proper informs us of simple pressure on the external skin. The muscular sense, whose organ is the system of nerves lying alongside the muscles, informs us of the contraction and expansion of the muscles, and enables us to direct our muscular movements.

A sense, as the term is used here, signifies a capacity for a particular sort of sensation. What a sensation is will be explained further on in this section. Sensibility is a term denoting, in a general way, a capacity for sensation, but not any sense in particular. Sensibility is a property of a living body, possessing parts which are peculiarly constructed, and adapted to the production of conscious states which are called sensations. Such parts are called sense-organs.

These explanations are taken over by psychology from other sciences. We go to physics for an explanation of the action of the external object upon the sense organ, and to physiology for an explanation of the mode of operation of the organs themselves. Psychology studies the mental state which results from the activity of the sense organ, whether the state results immediately or mediately.

The Production of the Percept.—We shall illustrate the mental state which results from the action of the sensory nerves by likening it to a photograph.

For the production of a photograph we require some sort of instrument which we may call a camera. Rays of light penetrate the aperture of the camera and disintegrate some of the silver salts that are attached to a gelatinized plate. When the distintegrated salts are washed off, the photographer has what he calls a negative. The photographer is able to obtain a positive by placing over this negative a sensitized paper. It is this positive, properly set up, which you give out to your friends as your photograph.

The mind, like the gelatinized plate, must, in every instance, receive an impression from an external object before it can form any sort of representation of it. Your piano must act upon your eye or ear, before you can see or hear it.

The reader is requested here to observe, even in thought, the conventionalities of life, and not to take notice of Imagination and Memory until they have been properly introduced. Just now you are requested to give your entire attention to sensation and perception.

Your piano, then, must act upon your eye if you are to see it, upon your ear if you are to hear it. Every object which you apprehend by any one of your senses must act upon that sense before it is apprehended. We are constantly seeing, hearing, smelling, tasting, touching objects. To experience any of these sensations, our minds must first be acted upon by these objects. And, after having been acted upon, the mind must react. The mere impression made by an object upon a sense organ is not a sensation. The sensation follows the impression.

The impression from the object causes some sort of change in the sense organ which is partly like the change wrought in the gelatinized plate by the object photographed. It is not like it in *representation*. It is like it in *function*. The function of the change wrought in the plate is to enable the photographer, after carrying the negative through a process of development, to produce a semblance of the object that stood before the camera. The function of the change wrought in the sense organ by the object that

acts upon it is to enable the mind, by reaction, to produce a mental representation which will stand for the object that has acted upon the organ.

Each sense represents its object according to its character. Sight represents its object as colored, hearing represents it as sounding, smell and taste as agreeable or disagreeable, touch as hard or soft, large or small. Each sense apprehends its object according to its particular character or capacity, and according to the impression which the object has made upon it.

Its apprehension of the object is its representation of it. The eye apprehends an object by seeing it, the ear by hearing it. Sight, hearing, smell, taste, touch, each is a representation of the object which has left an impression of itself upon the particular organ of sense. These five sorts of representations are all different. Yet they are all representations. None of them are mental creations. They are produced by the mind, but not out of the mind alone. They are produced by the mind after some sense organ has been acted upon by an external object.

Thus there are two factors in the production of a sensuous perception; first, the object outside acting upon the organ of sense; secondly, the mind within, reacting to the impression made upon it, and developing that impression until it stands as the representation of the object that produced the impression.

The mind, unlike the gelatinized plate, is a living thing. It not only lives, it is conscious of living; it is aware of itself as living. The gel-

atinized plate is not aware of any change wrought in it while the negative is developed into such form that it will be possible to obtain a positive from it by copying. The mind is conscious of the reaction by which it develops the impression which the object leaves upon it. *It is this sensuous consciousness of the reaction which the mind undergoes in producing a sensuous representation of an object which is the sensation properly so called. Sensation is the subjective side of the act of perception. It is the mental act of sensuous perception, viewed as producing a modification of the mind.* The objective side of the same act, *the act of the mind viewed as representing something, is what is understood by perception.* As ordinarily used, the word "sensation" signifies both sensation proper and sensuous perception.

The representation produced by the act of sensuous perception is called the *percept.* The percept is thus a sensuous representation of an object, which is produced by the mind, in immediate reaction to the impression which the object has produced upon a sense organ. By means of the percept the mind acquires knowledge of an object under a particular aspect, which is determined by the character of the sense and the impression which the object has made upon it.

In scholastic psychology the impression which the object makes upon the sense organ is called the *species impressa sensibilis* (the impressed sensuous image). The sensuous representation of the object which results from the reaction of the mind to this impression is called the *species*

expressa sensibilis (the expressed sensuous image).

Psychologists who are not familiar with the scholastic system sometimes assume that the scholastic explanation of sensuous perception involves the acceptance of the physical theories of Democritus and Epicurus, that the object makes an impression upon the sense organ by emitting a stream of actually physical images of itself. This theory properly belongs to the domain of physics, not of psychology. The science of physics has long since rejected it. It is only another instance of the danger of tying up a sound system of psychology with the transient theories of physical science. As a matter of fact, scholastic psychology never accepted this particular dogma of "science," as it had been rejected by Aristotle centuries before the scholastic system, which is founded upon the Aristotelian, came into existence. Scholastic psychology places the obligation of determining the sort of operation which the material object performs, in acting upon the sense organ, upon the science of physics, where it belongs. Scholastic psychology insists, however, that the mind cannot have a percept of an external object unless the object has somehow acted upon the sense organ. Whatever the character of that action may be, the result is an impression upon the organ of sense, which the scholastics call the *species impressa sensibilis*.

This impression, as scholastics view it, is analogous to the impression which the object before the camera produces upon the gelatinized plate. Analogy implies a partial likeness. The impres-

sion upon the plate is not precisely the same as the impression made upon the sense organ. There is a resemblance between the two, but only a partial, not a perfect, resemblance.

The plate is dead matter. The sense organ is an integral part of a living body. The action of the object upon the plate, and the modification which it undergoes as a consequence of this action, are both material. The plate has no power to wash away the disintegrated salts and to copy its image on sensitized paper. This operation must be performed by an outside agency, by the photographer. The plate is incapable of the immanent activity which characterizes living things.

The sense organ, on the contrary, is capable of immanent action. It produces its positive, without the aid of any outside agency, by the power which resides within itself. For this reason its image is called the *species intentionalis,* a vital image, to distinguish it from the *species materialis,* the material likeness, which is found in the photograph.

Because it is the same sensuous power which receives the impression and whose reaction to the impression produces the perfect mental representation, the percept, there is not the same delay in producing the finished mental likeness that there is producing the finished photograph. Though the production of the percept does not result instantaneously from the *species impressa,* yet the speed of execution is so rapid that it can be measured only by the most delicate instrument. The plate, on the contrary, must await

the convenience of the photographer before it is developed.

The *species expressa* is formed by the mind reacting to the impression made upon it, and so producing a likeness which will serve as a representation in the mind of the object which has impressed the sense organ. The production of the *species expressa* by the mind, in vital reaction to the impression made upon a sense organ, corresponds to the production of the positive by the photographer, from the impression made by an object upon a plate. The *species expressa sensibilis* is the *percept.*[1]

The term "mental photograph," it cannot be too often emphasized, is only an analogous term. "Photograph," literally, means "written in light." The mental photograph may be written in sight, sound, smell, taste, touch. The percept is not called a mental photograph because it is produced by light; but, rather, because, like the material photograph, it is a representation of an object which owes its existence partly to the ac-

[1] The *species impressa sensibilis* is the mental act of sensuous apprehension in so far as it owes its existence to the impression made by the object upon the organ of sense. It is the sense impression.

The *species expressa sensibilis* is the mental act of sensuous apprehension, as owing its existence to the reaction of the sentient organism. It is the percept.

As producing a sensuous representation of the object acting upon the sentient organism, the mental act is called a perception.

As producing a modification of sensuous consciousness the same mental act is called a sensation.

tion of the object, partly to the process of development which follows.

Intensity, quality, and duration of sensations.— At every instant we are subject to a multitude of impressions. Usually we attend to some, and ignore others. A couple, engaged in an interesting conversation in a lilac bower, will ignore the noise of the passing truck, while the explosion of a gun nearby will arouse them to a consciousness of their continued existence in a perilous world. Attention, or no attention, some impressions are so intense that a percept is immediately produced, accompanied by the sensuous consciousness which we call a sensation. The intensity of this state of consciousness will be greater or less, according to the force of the impression and the amount of attention bestowed upon it.

Psychological laboratories are equipped with instruments for measuring the speed and intensity of sensations. The speed is determined by finding the interval between the impression upon the organ, together with the recognition of it by the mind, and the outward manifestation of that recognition. The time required for the entire process is called reaction time. It involves the actions of both afferent and efferent nerves.

The Weber-Fechner Law is an attempt to determine the relation between the physical stimulus and the mental product, considered as a state of sensuous consciousness. This law concerns the intensity of sensations.

A difference of consciousness results, not only

from the activity of the different organs, but of the same organ, which gives quality to the sensation. Sensations resulting from the perception of different colors are said to possess different qualities. Differences in the quality of sensations are differences in kind. The quality of the sensation is determined by the character of the impression made upon the sense organ, and the condition of the organ itself. An unpleasant voice grates more on the ear when the listener is physically exhausted than when full of energy.

26. Percept Distinguished from Thought.—The sensuous perception, which is sensation considered objectively, is often confused with the act of the intellect. When the brain acts, a thought occurs. Because the two are simultaneous, they are often identified. It is important here to distinguish the percept from the thought.

We are all familiar with the use of words. Most of us cannot remember when we began to use them. Sensationists, who deny to the mind any power superior to sense, would make every act of the mind a sensuous act. The sensuous apprehension of sound, according to their theory, would be at the same time a state of sensuous consciousness and a perception of the significance of the word.

Fortunately we have a splendid illustration of the difference between sensuous apprehension of the fact of a thought symbol, and the intellectual apprehension of its significance.

In *The Story of My Life,*[1] Miss Helen Keller writes as follows about herself:

[1] Published by Doubleday, Page and Co.

"The most important day I remember in all my life is the one on which my teacher, Anne Mansfield Sullivan, came to me. I am filled with wonder when I consider the two lives which it connects.

"One day while I was playing with my new doll Miss Sullivan put my big rag doll into my lap also, spelled d-o-l-l and tried to make me understand that d-o-l-l applied to both. Earlier in the day we had a tussle over the words m-u-g and w-a-t-e-r. Miss Sullivan tried to impress upon me that m-u-g is mug, and w-a-t-e-r is water, but I persisted in confounding the two. In despair she had dropped the subject for the time, only to renew it at the first opportunity. I became impatient at her repeated attempts, and, seizing the new doll, I dashed it upon the floor.

"We walked down the path to the well-house, attracted by the fragrance of the honeysuckle with which it was covered. Some one was drawing water and my teacher placed my hand under the spout. As the cool stream gushed over my hand she spelled into the other the word water, first slowly, then rapidly. I stood still, my whole attention fixed upon the motions of her fingers. Suddenly I felt a misty consciousness of something forgotten—a thrill of returning thought; and somehow the mystery of language was revealed to me.

"I knew that w-a-t-e-r meant the wonderful cool something which was flowing over my hand. That living word awakened my soul, gave it light, hope, joy, set it free." [1]

Miss Sullivan tells us of the pump experience in one of her letters:

"The word coming so close upon the sensation of cold water rushing over her hand seemed to startle her. She dropped the mug and stood as one trans-

[1] ch. IV.

> fixed. A new light came into her face. She spelled water several times. Then she dropped on the ground and asked for its name, and pointed to the pump and the trellis, and suddenly turning round, she asked my name. I spelled teacher. Just then the nurse brought Helen's little sister into the pump-house, and Helen spelled 'baby' and pointed to the nurse. All the way back to the house she was highly excited, and learned the name of every object she touched, so that in a few hours she had added thirty new words to her vocabulary."[1]

This was not Miss Keller's first sensation, nor was it her first intellectual apprehension, not even her first apprehension of the significance of a sign. But it was her first intellectual apprehension of the fact that every object has a name and that it is possible to communicate with other minds by means of words. This apprehension was marked by that universality which characterizes the intellectual idea as contrasted with sensuous perception. She showed immediately that she had formed a universal concept of word as a symbol of thought. She wanted to learn the name of every object she touched.

In this Part we are interested in sensuous phenomena, and contrast them with intellectual phenomena only the more clearly to recognize the limitations of sensuous perception.

"Miss Sullivan tried to impress upon me that m-u-g is mug and w-a-t-e-r is water, but I persisted in confusing the two."

The sensation which Miss Keller experienced in the house when Miss Sullivan spelled

[1] p. 316.

"w-a-t-e-r" into her hand did not differ from the sensation which she experienced when Miss Sullivan spelled "w-a-t-e-r" into her hand as the cool water from the pump flowed over the other hand. But what a difference in the total mental product!

As the word was spelled into one hand while water flowed over the other, the mystery of language was revealed to her. Her intellect apprehended the symbol as a symbol. She apprehended the universality of symbol, that "everything had a name." This apprehension was not a percept. The percept is always particular; this apprehension was universal.

27. **Acquired Perception.**—The estimation of distance is sometimes spoken of as a sensuous product. The power of the sailor to estimate correctly the distance of a passing ship is called "acquired perception." The sailor estimates the distance correctly. The passenger beside him, who is making his first voyage, sees precisely what the sailor sees; yet is unable to estimate distance as the sailor estimates it. The percepts of both are practically equivalent. But, stored away in the memory of the sailor, are sensuous images of the past, representations of the many ships which appeared to him at the same distance. Associated with these representations of the past, are the memories of the many knots the ships had to make before they crossed the same line. The present percept of the sailor calls up the sensuous images of the past, the intellect compares the new with the old, and upon the findings which result from the comparison, formulates its judgment about the distance of the passing ship.

The judgment, of course, is not an act of sense perception at all, and should not be included under "perception," when the term is confined to acts of sense perception. What the sailor really has, and what the passenger really has not, is a rational basis for the act of judgment by which he estimates the distance which separates the two ships. We do not express our percepts in words. Every sentence we utter, when conscious, expresses a judgment. The sailor, in this instance, either does, or can, express a judgment. His so-called "acquired perception" is a series of mental acts, beginning with sensuous perception and ending with an intellectual judgment.

Every percept evokes images of past objects stored away in the mind. The present percept is interpreted in the light of these. We read a great deal of meaning into the present percept, which is really derived, not from the percept, but from the reproduced images.

"The proper sense judges of the proper sensible by discerning it from other things which come under the same sense; for instance, by discerning white from black or green. But neither sight nor taste can discern white from sweet; because what discerns between two things must know both. Wherefore the discerning judgment must be assigned to the common sense, to which, as to a common term, all the apprehensions of the senses must be referred." [1]

28. Now that the mind has percepts, what can it do with them?

I. It can discriminate between one percept and another, and unite them in consciousness.
II. It can retain, recall, and recognize them.
III. It can make new combinations out of them.

The first function is attributed to the Common Sense; the second to Memory; the third to Imagination.

From our discussion of the "Mental Faculties" in the preceding chapter, it is clear that we regard the mind as a single thing possessing a multitude of different powers, some of which are intrinsically independent of matter, as intellect and will, some intrinsically dependent upon the organism, as are all the sensuous powers. It is the one mind that hears and reasons. But the powers of hearing and of reason are different powers of the mind. They are distinguished from one an-

[1] Q. LXXVIII. A. 4, Reply 2.

other by their functions and their objects. If we wish to trace our mental apprehensions, as they pass through the entire process from the impression upon the organ of sense to the completed intellectual product, we must observe the actual differences between one function and another.

The phenomenal psychologist must ascertain clearly the mental facts with which he is concerned and their relations to one another; he must distinguish carefully between the different functions of the mind, and attribute each to its proper power. Man is one thing which performs many functions. The same man sees and hears and smells and tastes. We distinguish sight from hearing, and we distinguish both from smell and taste and touch. We attribute all these functions to man, but we do not attribute them all to the same power in man. The function of sight differs from the function of hearing, and, though we recognize both as functions of man, we attribute them to different powers in him. *When the effects of the act are not only individually, but specifically different, we refer the effects to powers that are specifically distinct.*

To determine the specific difference in the effects, we compare one with another. It is not scientific to lump together effects which are specifically distinct.

The common sense is catalogued as an internal sense. Not all the internal powers of the mind are catalogued as internal senses. The sensuous appetite is an internal power of the mind. But it is not denominated an internal sense. A sense is an apprehensive power of the mind. An in-

ternal sense is an internal sensuous apprehensive power of the mind. Besides the common sense, the memory and the imagination are also classed as internal senses.

With these preliminary ideas as a basis, it is possible for us to vindicate for the mind the possession of a power which is properly called the Common Sense.

We shall first give an instance of lumping together effects which are specifically distinct.

Mr. James Sully, in his *Outlines of Psychology,* writes:

> "*Perceptual Process Analyzed.* When on hearing a particular sound we say 'A bell is sounding in such or such a direction,' we discriminate and identify the sensation. This is obviously the first stage of the process. * * *"[1]
>
> "The second stage, that of perception proper, involves the recalling of other sense impressions besides that of the bell-sound. * * * The percept is thus the result of a process of grouping. It is a complex psychical phenomenon, of which the parts or elements are sensations."[2]

To be able to say "A bell is sounding in such or such a direction," is certainly not the first stage in the process of perception. In fact, it is not perception at all if perception is used, as Mr. Sully uses it, to denote the act of sensuous apprehension. To be able to say "A bell is sounding in such or such a direction" is to be able to pronounce a judgment, which is an act of the intellect, and not an act of any sensuous power.

[1] p. 150.
[2] p. 151.

How the mind derives its intellectual apprehensions, and how it forms its judgments, we shall discuss in Part IV, which is concerned with the rational phenomena of the mind. Here we are occupied with sensuous phenomena.

We saw, in the preceding section, that a percept is a mental photograph of a sensuous character, the *species expressa sensibilis.* By means of the percept the mind acquires sensuous knowledge of a particular aspect of a particular thing.

But the power of the mind, as sensuous, is not limited to the formation of percepts. It possesses, in addition, the power to combine the percepts and to discriminate between one percept and another. This power of combination and discrimination is certainly distinct from the power of production—no less than the power of assembling the parts of an automobile in a manufacturing plant is distinct from the power of producing the parts.

In the manufacturing plant the separate parts of the automobile are produced by machines in separate parts of the plant. The plant is one composite whole. The parts of the plant are distinct from one another as parts; but they are all parts of the same plant, all are connected, all receive their motor power from the same source, and all send their special products to the same assembling room.

In a similar way the nerves of eye and ear, of nostrils and palate, and of touch, are all parts of man, all are connected with the brain, all receive their power from the same source, and all

send their special products—the percepts—to the same assembling power.

When cadets are marching in platoon form, heads upright, eyes forward, they are enabled to keep in step by sight and touch. The harmony of their movements is not due to either of these senses alone, but to the combination of the percepts of both senses. The fact that habit enters into the result, does not affect the truth of our proposition. Habit makes the individual act easier, but does not make it possible. The possibility, in so far as the effect depends upon the sensory and not upon the motor powers, is due to the mental ability to assemble the percepts of sight and touch.

That the mind has the power of assembling its percepts is evident from the marching of the cadets. That the power to assemble the percepts is distinct from the power of forming them, is clear from the very nature of the acts. The acts of sight and of touch are distinct. One may lose the power of sight and preserve the power of touch. The acts are certainly not the same.

Yet, though the acts of the several senses are distinct, there is in the mind, as sensuous, the power to assemble the percepts which result from these acts and to employ them for self-direction as effectively as if all the percepts were produced by a single sense.

The power of assembling implies the power of discrimination. The men who assemble the parts of an automobile must be able to discriminate between a clutch and a wheel. The mental

power which assembles percepts is the power which distinguishes between them.

It is possible to transmit by radio both speeches and pictures. When the power of transmission by radio is so far developed that the sounds, sights, tastes, smells, pressure, from a single area can all be produced in a single room, the world will possess a mechanical imitation of mind as having the power to form percepts of the several external senses.

If, further, an instrument is invented which can be lodged in that same receiving room, an instrument which is capable of combining the several revelations which are made by the separate instruments into a single coherent report of the conditions of the area from which the sounds, sights, tastes, smells, pressure, are transmitted, an instrument which can, at least in a measure, interpret the revelations which it receives, the world will possess a mechanical imitation of mind functioning as Common Sense.

Imagine yourself seated at a table in a hotel with the bill of fare in your hand. Your reading of it involves the action of the eye, which sees the colors on the card, and the action of the intellect which interprets the symbols. Appetite sets your imagination at work, suggesting a choice for the will. Having made your choice and written out your order, you await results. The results appear in a variety of dishes, whose odor stimulates your appetite. Sight, taste, smell, touch—and possibly hearing—give testimony to the fact that you are dining.

All your mental faculties have been called into

play. When a sensation is aroused, the whole mind is set in motion. Thought follows upon sensation; desire, and perhaps choice, upon thought. The mind may pass through the entire cycle of operations in an instant. This is not, however, the same as saying that there is only one operation. There is only one mind operating, but that one mind performs many operations. One of the operations your mind performs while at table is the combining of the reports sent in by the several senses. Your very language reveals the character of this mental act. You say: "I see this sirloin; I smell this cheese; I feel it in my mouth; I taste it." What does "I" stand for? It is the empirical Ego, the "*I*" undergoing a variety of mental experiences. It is the same "I" that sees and hears, tastes and smells and feels. Since each of these sensations is distinct from the others, to be attributable to the same "I," they must somehow be combined. This "I" must have a combining power which, as a power, is distinct from the particular power by which each separate operation is performed.

One of the functions, therefore, which the mind exercises in relation to the percepts which it has formed, is to bring them into combination with one another, and to discriminate between them. This power belongs to the mind as sensuous. As possessing this power, the mind is called the Common Sense.

29. In present usage, memory is employed to signify the power by which past mental acts, or states of consciousness, are retained in the mind, recalled and recognized. The functions of memory, in this sense, are threefold: *to retain, to recall,* and to *recognize* past mental acts or states, which, when recalled, are denominated "phantasms." "When they are objects of memory and imagination they get the name of phantasms."[1] A phantasm is thus a sensuous representation of an object apart from the presence of the object; or, if in the presence of the object, then called up out of the past, in contrast to a percept, which is a sensuous representation of a present object formed in the presence of the object.

Retention.—Reid (1710-1796) regarded the power of retention as no less mysterious than the power to see into the future. He could find no explanation of the mind's power of retention.

In general we may say that there are three possible ways of accounting for the retentive power of memory. Some psychologists make it an all-bodily power, some an all-spiritual power, some a combination of the two.

All who refuse to recognize in the mind a power intrinsically independent of matter are necessitated to regard memory as a power which inheres in the organism alone—an all-bodily power.

Some, recognizing the spirituality of the soul, and unable to discover any satisfactory physiological explanation of the phenomena of mem-

[1] Reid, *The Powers of the Human Mind,* Essay I, ch. I, no. 10.

ory, regard it as a power of the soul alone. Such was the opinion of Descartes.

Scholastic psychologists recognize in memory a twofold subject, the mind as sensuous and the mind as spiritual, and though this Part is devoted to the consideration of sensuous phenomena, it is the most convenient place to assemble all that we have to say about memory both sensuous and intellectual.

That St. Thomas recognized both elements in memory is evident from the following quotation:

> "But memory, being an act exercised through a bodily organ, as Aristotle shows, cannot remain in the soul after the body is gone; unless memory be taken in another sense for the intellectual hold upon things known before; this intellectual memory of things known in this life must remain in the departed soul, since the intellectual impressions are indelibly received in the potential intellect."[1]

That both sensuous and intellectual power is required for human memory is clear enough. All our abstract ideas are outside the realm of sense. No sensuous power can produce them, nor can any sensuous power retain them. The product of sensuous activity is always particular. Abstract ideas are universal. And as they can be produced only by a spiritual power, so they can be retained only by a spiritual power.

Yet, in this life, intellect cannot act without the co-operation of sense. If the sensuous power precedes, the intellectual power follows; thought follows upon sensation. If the intellectual power precedes, the sensuous power of the mind must follow, according to its capacity. Like the Siam-

[1] *Of God and His Creatures*, Rickaby, Bk. II, ch. LXXXI.

ese Twins, sensuous power and intellectual power, in the human mind, must travel together. And they must work together, whether producing representations of the present, or reproducing representations of the past. Hence, the power of retention, which is attributed to memory, is not a property of the organism alone, nor of the soul alone, but is shared somehow by both.

> "So that if it were certain that the impressions made on the brain in perception remain as long as there is any memory of the object, all that could be inferred from this is that by the laws of nature there is a connection established between the impression and the remembrance of that object. But how the impression contributes to this remembrance, we should be quite ignorant; it being impossible to discover how thought of any kind should be produced by an impression on the brain or upon any part of the body." [1]

Reid recognized the existence of memory as a fact, but had no explanation for it himself, nor did he accept the explanations offered by others.

The physiological function is for physiologists to explain. The psychological phenomena alone concern us. Reid's problem is a challenge to physiological rather than to phenomenal psychology.

The phenomena of memory are facts of the mind. It is a fact that we can recall past mental experiences, and perceive their representative significance. Memory does not produce a representation of a present object. It reproduces a representation of the past. The representation

[1] Reid, *Intellectual Powers*, Essay III, ch. VII.

of the past is both sensuous and intellectual: sensuous, since the intellect is extrinsically dependent upon sense; intellectual, since "when the brain acts, a thought occurs."

The memory image originates in a percept, followed by a concept. Memory does not produce percept or concept. It *reproduces* them. And, since memory images are reproductions, they must somehow be retained in sense and intellect after their original production.

The phenomena of memory are by no means so mysterious as the phenomena of prescience, as Reid seemed to think. Prescience in man is naturally impossible, except as an inference. Properly understood, prescience implies a foreknowledge of an event which is not inferred from its cause, but derived from the object itself. Only existing objects can make an impression, as objects, upon our external senses. The senses in the course of nature cannot apprehend the future. But they have in a natural manner apprehended the object retained in the memory.

The memory is not a prophet. It is a treasurer. It stores away in its vaults the percepts produced by the senses, and reproduces them upon demand. These percepts when reproduced are not called percepts. A percept is a sense representation of a present object. A phantasm is a sensuous image of an object, real or otherwise, apart from the presence of the object, or objects, whose action upon the sense organs caused it to come into existence.

Physiologists assign different areas of the

brain to the retention of different classes of phantasms.

Dr. William H. Thomson[1] illustrates this thought by assimilating the brain to a library in which there are many shelves. On these brain-shelves repose our mental representations. As one book-shelf can be injured while another remains undisturbed, so can brain-shelves. As an instance in point he cites a case reported by Professor Hinshelwood of the University of Glasgow, to whom a patient was brought, suffering from word-blindness. The patient, when required to read passages in the various languages he had studied, succeeded very imperfectly with English, better with French, still better with Latin, and perfectly with Greek. Whence Dr. Thomson concludes that the "only explanation" is that the brain-shelves were unequally affected by the shock from which the patient suffered.

It is for physiologists to decide whether the "only explanation" given by Dr. Thomson is the correct one. That there is some change there, is clear enough. Even though the character of that change cannot be determined with certainty, the phenomena of memory must be recognized. We may be perfectly certain of the existence and character of one set of phenomena, while totally ignorant of another set of closely allied phenomena.

Reproduction.—Memory not only retains phantasms, it reproduces them. It brings them back to consciousness. It is memory's power to reproduce and recognize past mental experiences,

[1] *The Brain and Personality*, pp. 95-97.

which gives continuity to mental life. Without this power to reproduce, it would be useless to produce. Phantasms are the wealth of the mind as sensuous. If the mind could not retain and reproduce the wealth which it produces, it would be as badly off as the laborer or capitalist who could not retain and reproduce the material wealth which they produce. It would be a Tantalus, ever exerting itself, never attaining.

Without this power to retain and reproduce past mental states, we should find it necessary to be introduced to persons every time we met them —if such a thing as introduction were possible. For without the power of reproduction no one could recognize the name of another person, nor even his own name. Without it no one could find his place of business or know what to do if he got there.

The reproduction of the past mental image is sometimes spontaneous, sometimes volitional. The acts of memory which concern familiar objects, are spontaneous. The acts of memory when a witness is giving testimony before a court, are volitional.

Spontaneous Reproduction.—The spontaneous character of the acts of the mind in recalling past mental images was recognized by Aristotle and St. Thomas. Recent psychologists have made it the basis of that system of psychology which is known as "Associationism," which represents the mind itself as a cluster of mental associations whose separate elements appear and reappear according to certain fixed laws.

We have already explained our notion of mind,

and need not repeat it here. We accept the fact of mental association, which harmonizes perfectly with our notion of mind. The laws of memory which govern the reproduction of past mental images, and are known as the Laws of Mental Association, are effective for acts of spontaneous reproduction when the mind is functioning normally. Your memory, acting in obedience to these laws, reproduces images of the past and identifies them. Thus you recognize your own house, out of the thousands of houses in your city. You recognize the members of your own family, out of the thousands, possibly millions, in the city. In such instances your memory spontaneously reproduces the image of the past with infallible accuracy when your mind is functioning normally.

The Laws of Mental Association which your memory is said to obey in such instances, are:

I. The Law of Contiguity;
II. The Law of Similarity;
III. The Law of Contrast.

I. *The Law of Contiguity* may be of space or time. Mental associations which concern your home have space as their object. As belonging to a particular series of mental events they have a time association.

You identify your present home as the place where you have dwelt for many years. You carry in your memory many images which represent your associations with your home. Your experiences occurred at particular periods of the past. Your memory enables you not only to re-

call the past experience, but also to give it its proper place in the series of your mental experiences.

Some of the images which return spontaneously are linked together in trains. The mention of a novelist suggests the title of one or another of his books. The sound of an orchestra playing a piece to which you have danced, suggests the movements of your feet and body. A word suggests a story: "That reminds me——"

Frequently phantasms are like individuals hurrying through the city streets. Some individuals wish to travel east, others south. When the streams meet at the street corner, there is confusion, one impeding another. Phantasms of different objects rush into consciousness during a conversation. Some harmonize with the subject, others tend to drive it in a new direction. If there is a definite purpose in view, obviously the right of way must be given to the phantasms that harmonize with the subject.

II. *The Law of Similarity* operates to recall images that resemble one another. The sight of a friend suggests an inquiry about his family or about others known to both. College graduates rehearse the experiences of the past, the name of one of their companions suggesting another, from the similarity of their experiences as recorded in memory.

III. *The Law of Contrast* operates to recall images that represent experiences of an opposite character. The mention of names which are asso-

ciated with success suggests the names of others who have failed.

Voluntary Reproduction.—A student undergoing an examination, a witness before a court, a professor delivering a lecture, controls the flow of mental images, or at least attempts to do so. It sometimes happens that the student cannot recall the images which he requires to enable his mind to form the answer to the question before him. Even the professor, at times, is "stuck." The images which represent facts or words fail to appear.

Memory is a stream made up of currents which have their sources in the fountains of contiguity, similarity and contrast. To put memory under the control of the will is like damming a stream, turning it into a sluice, and taking as much of it as may be necessary and possible for power. Sometimes the stream is low and the power which it generates is slight. Sometimes the stream is superabundant, more than is required for the work to be done. The will selects what it requires, and can obtain, from memory's stream of images, and permits the rest to pass by unused.

The voluntary recall of past mental experiences is called reminiscence, and involves reflection, comparison and choice.

Memory systems are analogous to mechanical devices, for controlling the stream of images. The more vivid the percepts and the more recently produced, the easier and more accurate the reproduction. The recognition of association in the production of images is evidently an aid in their reproduction. Memory systems emphasize

association in production as well as in reproduction. The association in production is subjected to design, not abandoned to chance. Like every art, it aims at perfecting nature.

Recognition.—Recognition involves the comparison of the present mental image with one previously formed, and the identification of the representative significance of the two. The comparison may require only a fraction of a second. Its importance cannot be estimated from the time required for its performance. You recognize the house in which you live, the instant you see it. In that instant the phantasm is compared with the percept. Without the phantasm of your house in your memory you would not recognize your house upon seeing it. To recognize the object of your percept, you must identify the representative significance of your percept with the representative significance of your phantasm of the same object.

The recognition of any material object is an act of the sensuous memory. The recognition of the representative significance of a supra-sensuous act of the mind is the function of intellectual memory.

Men have so much confidence in the power of the mind to recall a past mental image, and to identify its representative significance, that upon its testimony they are willing to pronounce a man a murderer and condemn him to death.

Training the Memory.—"A memory is everywhere; *the* memory nowhere," said Volkmann.[1] This proposition is not true in the sense that the

[1] Quoted by Sully, *Outlines of Psychology*, p. 282.

preserved image is memory in the adequate meaning of the word, which includes, besides retention, recall and recognition. The power to recall and to recognize a previous mental image is not a power of the image, but of the mind. The image does not even "retain" itself. It is retained by the mind. The mind as having the power to retain, to recall, and to recognize, past mental images, is called the memory. The retained image is *a* memory only in the sense that through it *the* memory has the power to recall the past and identify it with the present.

Memory, as a natural power of the mind, will act without any formal training. But every person brought up in civil society is subjected to some training of the memory. It may be self-imposed or imparted by others. It may concern things only, or things, thoughts and words. Human associations make so many demands upon memory that the mind cannot escape forming the habit of retaining, recalling and recognizing past mental images more readily and accurately than if totally exempt from all outside influence. Some training of the memory there must be for those who dwell in social intercourse with one another. When, therefore, we speak of training the memory, we do so to contrast the memory which is trained scientifically from the memory which receives only the haphazard training of social life.

Very much of the training of the early years of school life is scientific training of the memory. The subject-matter is presented to the child in such a way as to enable it to form vivid percepts of objects which illustrate abstract propositions,

such as "two plus two equals four." Having formed the percepts and concepts, the child is required to reproduce them, and the practice is continued until the child is able to perform the operation with ease and accuracy; in other words, until the habit is formed.

When the child has learned a few facts by memory, he is taught to connect them together in his mind, to assimilate the ideas which he has formed. If we were to personify mind, we should say that the mind grows by what it assimilates.

Memory, therefore, can be scientifically trained by teaching the child to form vivid percepts, to observe similarities and differences in the objects which it studies, to retain these percepts, as thus related by similarity or difference, and to connect them with one another so as to constitute an ordered system of ideas in its mind, and to form, by judicious repetition, the habit of reproducing accurately the ideas which it has formed.

Memory is not the only power of the mind; nor is it the only power which education should develop. But it is a power of the mind, and education can develop it, so that not only old ideas can be reproduced and recognized quickly and accurately, but also that new ideas may be acquired by the aid of the existing body of ideas —into which they should be incorporated when they enter the mind.

Mental assimilation requiring, as it does, the perception of such abstractions as similarity and difference, involves intellectual activity. The act of mental assimilation, therefore, requires the aid of the intellectual memory.

Mental assimilation usually requires a considerable period of time, especially if the task be difficult. But with an intimate knowledge of the general subject, and intense concentration of mind, the task may be accomplished in a short time. Thus Mozart was able to write down the Miserere in the Sistine Chapel after hearing it twice.[1]

The difficulty increases when the separate facts have no natural connection with one another. Yet Lewes tells a story about a man who, after walking half a mile through a crowded street, was able to name all the shops he had passed in their relative order.

As we grow older the memory responds more slowly and more unevenly to the demands made upon it. We often meet a person with whom we are well acquainted, but whom we cannot call by name. The name may recur to our minds later while thinking of some other subject. "Unconscious cerebration" has been going on in the meantime. We have been seeking some link which will associate the man with his name. While seeming not to think of it, memory locates the link and the name with it. Some association between the phantasm of the person and of his name must be established before memory can reproduce the phantasm of the name. This phenomenon may appear even when the name is very familiar. But, in that case, the difficulty usually arises from the fact that the brain is weary, or that attention is centered upon some other subject, and cannot readily be switched to a new object.

[1] See *Diseases of Memory*, Ribot, p. 137.

As the reproduction of mental acts and states may be aided by observation, and its practice cultivated as an art, so its opposite, obliviscence, might be cultivated. It is possible "to learn to forget" by adopting an attitude towards previous acts and states of the mind which is the very antithesis of that required for cultivation of memory. It may happen that a man is not only without a country, but even without a language. The case may be exceedingly rare; but the present writer is acquainted with one such case where the man, an Italian, living in America, forgot his native language from lack of opportunity to employ it, and never acquired English, owing to the difficulty he experienced with it. Memory demands for its exercise the association of ideas, and when ideas are permitted to remain dissociated in the mind there is nothing to summon them into consciousness. The possibility, and the fact, of obliviscence, evidences the necessity of associating with one another in the mind the ideas which we wish to remember.

The solitaries who retired from the world to live in the desert, out of all contact with society, were not ordinarily recalled by society to hold public office or to exercise other public functions. Neither is the idea which enters the mind as a stranger, and buries itself away out of all association with other ideas, likely to be summoned out of its obscurity. We must associate our ideas with one another, link them into groups, if we wish one idea to lead another with it, when summoned back to consciousness. It is the "association of ideas" which memory rules. Solitaries of the

mind like the solitaries of humanity, retire beyond the range of authority. Memory rules only over those ideas which are linked together by the bonds of mental association.

Dr. Thomson's assimilation of memory to a well-ordered library, where every book has its place on a shelf, and where the shelves and sections contain books which are associated in subject or treatment, and arranged in a regular order, excellently illustrates the psychological phenomena of a good memory, whatever its value may be as a physiological interpretation of the functions of the brain.

A storehouse for books which are merely piled up, one upon another, without any regard for their contents or style, typifies the memory which has received no scientific training. The books are all there, and if the searcher will continue his efforts he will find the one he seeks. When he wishes to secure another book he must institute a similar search. Naturally a person will search for books in such a room only under the compulsion of dire necessity.

Not every printed article received by a library is preserved on its shelves. Much of the literature which it receives is of ephemeral interest and thrown into the waste-basket after it has served its immediate purpose. It is only the book or the article which is likely to have a permanent interest which is preserved and catalogued. A book so catalogued and placed can be located after a few moments of search. The library may contain hundreds of thousands of books and articles. But, in a well-ordered library, each is quickly

located when there is a demand for it, identified by the librarian, and presented to the person who calls for it.

Thus, in building up a good library, there must be a wise selection of materials, and a rational arrangement of them when stored away.

Memory is the library of the mind. The intellect is the scientific librarian. There are many materials which the intellect does not see fit to catalogue—the unimportant details of daily life. What were you doing a year ago today at this hour? If the matter was important in your life, you can recall it. If unimportant, you cannot recall it. The fact has become confused with a million similar facts. Your mind did not catalogue it because it was not of sufficient importance. It is impossible to catalogue every phantasm. You must pick and choose what will be of greatest value to you.

Memory is scientifically cultivated, in greater or less degree, by all scholars, professional and business men, and by all who earn their living by regular employment.

Scholars have the more difficult task of retaining in their memories hosts of abstract ideas. Professional men, whose interests are centered on practical matters, lay more stress upon the phantasm, but cannot neglect the correlative abstractions of the intellect. Business men and laborers are more likely to be concerned with individual objects. The arrangement of their phantasms reflects the arrangement of the objects which engage their efforts.

It is the scientific memory of the objects which

occupy the attention of each class that enables each to perform his task effectively and easily, except when a new problem arises which demands study. When the problem has been solved, and its solution stored away in the memory, it is available for future use when similar situations arise.

The importance of scientific training to the mind of the child is evident from its value to the grown man and woman. It is during the years of childhood and youth that memory is trained scientifically. Throughout the remainder of life the individual reaps the fruit of this training.

Scientific training of the memory consists in directing the activities of the natural powers of the mind, not in the creation of new powers. It is based upon the principle that ideas which are associated with one another in the mind tend to recur together when summoned into consciousness by a present mental experience. Association in retention is an essential condition for association in reproduction. Association in retention results from mental assimilation; or, to use the simile from the library, from the scientific cataloguing by the mind of the phantasms which it preserves. Scientific arrangement of the contents of memory carries with it ease and accuracy of reproduction and consequent identification.

30. Allied to memory, yet differing from it, is the imagination. The sensuous image with which both faculties are concerned is the phantasm. But while memory is the treasurer of the mind, retaining, reproducing and identifying images of the past, the imagination is the artist of the mind, uniting those images into new combinations, taking part of one and part of another, and combining them into forms which bear little resemblance to the original percepts upon which they are based. The memory identifies the contents of a phantasm with the contents of the present percept. It is the act of identification which distinguishes memory from imagination. The imagination does not identify the contents of the phantasm which it reproduces. The work of the imagination consists in forming new combinations out of past images.

The common sense, as the faculty which receives, combines and co-ordinates present percepts, is in immediate contact with reality. The memory by identifying the representative significance of past images, associates the realities of the past with the realities of the present. The imagination, unconcerned about identification, is divorced from reality. Without any regard for the realities to which the original percepts were due, the imagination, artist-fashion, constructs a new image, not out of new materials, but out of the elements contained in the phantasms stored away in the memory.

General Importance of Imagination.—The imagination plays a great part in the life of the individual. His hopes and fears and loves are largely influenced by his imagination. In the normal person the imagination does little harm, but very much good. It is the imagination, forming sensuous images to illustrate the abstract ideas in the intellect, with which it co-operates, that enables us to understand easily and clearly. When an abstract proposition is enunciated which we do not apprehend readily, we ask the speaker to illustrate. If he himself has an imagination which effectively co-operates with his intellect, he will give an illustration which we can reproduce in our own minds, and in which we can see, embodied in a definite image, the lines which his words express in general terms. "Novels with a purpose" are designed to furnish just such images in illustration of abstract propositions.

The teacher is constantly making use of the imagination of his students to enable them to grasp abstract ideas. And unless the teacher can evoke the appropriate phantasms, he will have difficulty in communicating to his pupils the ideas which he wishes to impart.

Assuming the necessary qualifications in other respects, it is the teacher who can arouse the imagination to form appropriate phantasms, whether by stories or by comparisons, who attains eminence in the classroom. The students easily grasp, and tenaciously hold, the universal truths that are associated in their minds with vivid phantasms.

In the same way the public speaker with a message delivers it effectively if he appeals to the imagination. The preacher has sublime truths to impart. But the sublimity of those truths will not be appreciated unless they first arouse phantasms.

The orator who can illustrate a general proposition by word-pictures and stories has an immeasurable advantage over the speaker who merely enunciates abstract propositions. If the subject will tolerate wit and humor, and the orator is gifted with these powers, he will find them of great service. They are the imagination at play. The work of the intellect alone is unemotional. Wit and humor introduce a spirit of fun into what would otherwise be a very uninteresting task. Give depth and finish to the orator who can paint interesting scenes upon the canvas of the imagination, and he can sway his audience as he chooses.

The imagination will act, anyway, whether the speaker interests it or not. If he fails to interest it, the imagination will distract the listener. If he entertains it, the imagination will follow him as the small boy follows a circus.

To the man who can control it, the imagination of the listener is not an enemy, but an ally.

We are constantly using the imagination. By the exercise of imagination we anticipate the future. Spectators at a game anticipate in imagination the feats that are to be executed, and evidence their anticipation by their wagers. Students in a class of physics or chemistry anticipate in imagination the experiments which the professor is about to perform. College boarders are likely

to imagine with considerable accuracy the concoctions which the chef has devised to deceive their appetites.

The imagination, when acting in a capricious manner, and occupied in the production of unusual, whimsical phantasms, is called fancy. Among the mental products which owe their origin chiefly to this power are wit and humor.

Various distinctions are made between wit and humor. Wit requires words. Humor may be expressed by words or manner. Humor penetrates to the depth of thought. Wit catches distant resemblances between unlike things. Humor is always kind. Wit is sometimes kind, often bitter.

The products of fancy do not owe their existence solely to the imagination, since both wit and humor involve intellectual elements, and, therefore, demand the exercise of intellectual activity. They do owe their existence, however, chiefly to the imagination, since it is due to the spontaneous action of the imagination that phantasms arise upon which the intellect bases its witty or humorous sallies.

The acts of the imagination may be spontaneous or controlled.

Spontaneous Acts.—What we call the spontaneous act of the imagination is not spontaneous in the sense that it is uncaused. It has a cause. The efficient cause is the imagination itself. The exciting cause may be an external object, or an internal condition of the body. The act of the imagination is called spontaneous because it is not immediately directed by the will, or subjected to an external influence under the direction of the

will. The phantasms that arise in the mind while day-dreaming are called spontaneous in this sense.

Dreams.—During sleep the imagination acts spontaneously in the sense that it is uncontrolled by the will, not that its phantasms are uncaused.

During sleep the imagination is especially active: it has the field to itself. The acts of the imagination which occur during sleep are called dreams. In this state the activities of sight entirely cease. Impressions of various sorts may, however, be made upon the organs of the other senses. These impressions may be reported to the common sense. But, if they are reported at all, they do not enter the mind as percepts. They simply set the imagination at work, which thereupon produces what we might call "Nature's Motion Picture Show."

Mark Baldwin tells how, in his own case, the imagination translated sounds. He dreamt that he was standing in a forest, when suddenly a man appeared with an axe in his hands. The man began to chop a tree. Baldwin counted four strokes of the axe. At the fourth stroke he awoke. On awaking he heard the clock strike. He counted the strokes of the clock, which numbered four in all. It was twelve o'clock. Putting together the four strokes of the axe, and the four strokes of the clock, he had eight strokes. His imagination had translated four strokes of the clock into the strokes of an axe. During the first four strokes of the clock his imagination was occupied in setting up scenery.[1]

[1] *Feeling and Will,* Appendix B.

When dreams are due to an external cause the sense-impressions made upon the sleeper are sufficient to induce the imagination to act without awakening him. The imagination, set in motion, combines the phantasms which are aroused, into wholes that are sometimes consistent, sometimes very inconsistent. Yet, in this state, the mind accepts the succession of phantasms as representative of reality. In our waking moments the presence of the percept prevents us from attributing reality to what is evidently only a fiction. During sleep the imagination presents its images without restraint of any sort; and, as there is no test to enable the mind to distinguish between fiction and fact, and as the mind is inclined to accept every mental image as representative of fact, unless held in check by actual percepts, the mind accepts the motion picture show upon which it is gazing, as expressive of reality.

The dream which results from an internal condition of the body is subject to the same distortion of images as the dream which is due to an external cause. To have a scientific knowledge of the significance of dreams one must be able to connect the dream with its exciting cause. Why one phantasm rather than another? We can account for the percept, in a measure, since there is a constant proportion between the percept and the exciting cause. Inconstancy, not constancy, characterizes the dream.

An impression upon any organ of sense, external or internal, while not sufficient to arouse the sleeper, may excite a phantasm. Not all

phantasms that occur during sleep, can be attributed to a single sense.

Psycho-Analysis.—Psycho-analysts attempt to reduce the interpretation of dreams to a science. Their problem is to connect the phenomenon with its cause. Until this connection is established there is no science of dream interpretation.

Unlike such dream interpreters as Joseph and Daniel, whose achievements are recorded in the Sacred Scriptures, psycho-analysts are not prophets. If they are anything, they are scientists. They seek their explanation of the dream in the psyche, not in revelations from heaven. They must say to their subject, as their prototypes, the diviners of old, said to the King of Babylon: "Tell thy servants thy dream, and we will declare the interpretation thereof."[1]

The psycho-analyst, from the analysis of dreams, and by the aid of full and open confession of physical and mental habits, may succeed in helping the unfortunates who have brought distress upon themselves by a misuse of their natural powers of mind and body. To such, psycho-analysis may be very helpful.[2]

Psycho-analysis is inclined to overemphasize the element of sexual impulse in tracing mental trouble to its source, as if all the phantasms of

[1] Daniel II, 4.

[2] Quackery in psycho-analysis may be no less dangerous to the mental and moral life of the subject than medical quackery to the physical life of the patient. Dr. James J. Walsh, in *Cures*, ch. XIV, expresses the conviction that Freud's whole system is pernicious quackery.

the dream owed their existence to the operation of a single sense. Sexual impulse is undoubtedly at the root of much mental trouble, but by no means of all the mental troubles with which the race is afflicted. The persistent interpretation of all dreams as symbolic of the sensual may be justified in the case of the monomaniac sensualist. But as an interpretation of the dreams of the normal man or woman, it can approve itself only to the mind that revels in filth.

Cheerfulness and Worry.—Phantasms, arising spontaneously in the mind, produce such opposite states as cheerfulness and worry.

When cheerfulness is genuine, and not merely an outward mask to conceal inward gloom, the smiles and songs, wit and humor, of the cheerful person, are suggested by inspiring phantasms.

The anticipations of evil which characterize worry, spring from phantasms which picture the approach of a threatening evil or the loss of a treasured good. Worry is said to be deep-seated when phantasms associated with the evil feared or hated constantly recur, even against the firmest purpose of the will to suppress them.

The worry may be subconscious in the sense that the mind does not advert to it. All forms of worry have their reaction upon the nervous system. If a person can die of fright, as is possible, it is evident that mental states do react upon the nervous system, and, through the nervous system, upon the vital organs of the body. Subconscious worry, worry which trails the mind as it occupies itself with its daily tasks, without any apparent interference in the performance of those

tasks, can wear down the resistance of the mind so that a nervous tension results. Metaphorically speaking, the mind, under the pressure of worry, puts its foot on the brake of the nervous system, whereupon there is a grinding of the wheels, a breaking down of the power of resistance. A cure is possible only by substituting for the phantasm which inspires fear, one which pictures freedom from all danger. Sometimes a complete change of occupation, in new surroundings, will produce the desired effect. Whatever the material agencies that may be employed, the sufferer can be cured only by substituting a cheerful phantasm which will effectually banish the intruder that is causing the worry.

As for worry, so for every other form of mental disturbance, the haunting phantasm must be dispelled before the mind will be able to devote its full energy to its chosen task.

In the victim of sensual passion, a shock of some sort, arising from conflict over other interests, often dislodges the phantasm which, like the "Old Man of the Sea," rides its victim ruthlessly. Concentration of attention upon such a phantasm merely strengthens its hold upon the mind. *Effective distraction from it, and concentration upon some inoffensive interest,* is necessary for relief. "Forget it" is the best advice that can be given to such a sufferer. It seems that one of the evil effects of psycho-analysis in practice is that it sometimes feeds a flame which should be starved.

Auto-Suggestion.—It is an established fact that one person can communicate a suggestion to an-

other which will result in action as readily as if the person who receives the suggestion had formed the purpose in his own mind. Sometimes the suggestion is communicated to a person under hypnotic influence; sometimes when the subject is partially or fully conscious.

Emil Coué has invented a method of auto-suggestion by which the subject exercises upon his own mind the suggestive power which the hypnotist exercises upon his subject. Coué claims that all suggestion ultimately resolves itself into auto-suggestion.

> "Suggestion does not indeed exist by itself. It does not and cannot exist except on the 'sine qua non' condition of transforming itself into auto-suggestion in the subject. The latter word may be defined as the implanting of an idea in oneself by oneself."[1]

Coué attributes auto-suggestion to the imagination: "It is the training of the imagination which is necessary."

Concerning the power of auto-suggestion, he remarks:

> "Auto-suggestion is, as I said above, an instrument that we possess at birth, and with which we play unconsciously all our life, as a baby plays with its rattle. It is, however, a dangerous instrument; it can wound and even kill you if you handle it imprudently or unconsciously. It can on the contrary save your life when you know how to employ it consciously."

It is quite evident from Coué's whole presentation of auto-suggestion that the mental faculty

[1] *Self Mastery Through Conscious Auto-suggestion*, Emil Coué, p. 11.

to which the suggestion is addressed is the imagination. The "idea" which is implanted in the mind is certainly not a percept, but a phantasm. This phantasm is evoked by suggestion.

It must be observed that auto-suggestion, as Coué understands it, is not a will-controlled state of mind: "But above all, and this is an essential point, the will must not be brought into play in practicing auto-suggestion."[1]

The determination to practice auto-suggestion may be due to a deliberate resolution. The actual flow of phantasms must not be controlled by the will.

Since the phantasm reacts, through the cerebrospinal nerves, upon the sympathetic system, it is evident that functional disorders, due to the influence of disordered phantasms, should be curable by other phantasms, unless the disorder has progressed so far that the nervous system is unable to respond to its opportunities.[2]

Alternating Personality.—Another form of spontaneous, or uncontrolled, imagination takes the form of multiple personality.

[1] *Ibid.*

[2] Dr. James J. Walsh, in *Cures*, gives an interesting account of the many cures effected in past ages by such forces as "Tar Water," "Mesmerism," etc. He rates the cures as real beyond all cavil. But the remedies, when subjected to scientific tests, were found to be utterly inadequate to the effects to be produced. The victims cured owed their cures to mental suggestion. The remedies were effective so long as they carried the suggestion of a sure cure. When their inherent powerlessness was scientifically demonstrated, they lost the power to carry this suggestion, and their healing careers were ended.

Whether the mental disease appears under the guise of multiple personality, delirium tremens or insanity, it is always due to some disorganization of the brain or nervous system, which is reflected in the imagination and manifested outwardly by abnormal words and conduct. The discussion of an instance of this kind will enable the reader to understand our views upon this subject.

The Associated Press reports for December—, 1921, carried the following story:

> "Science is slowly but surely killing the soul of 'Polly,' the evil influence which has been fighting for control in the mind of Berenice R.
>
> "Miss R's brain is partly possessed by an alien, who at frequent intervals obliterates entirely the personality of Berenice, and converts her mind into that of a wilful, uncontrollable child of four years who answers to the name of 'Polly' and knows nothing of Berenice. Berenice cannot tell anything about 'Polly'—'Polly' knows nothing of Berenice. Dr. G. saw that 'Polly' was the personality to be extinguished. He began by using hypnotism. In that state he called her Berenice, and Berenice responded quickly in the girl's normal voice. Then he summoned the spirit personality of 'Polly' and at first there was no response—He slowly, deliberately dragged the cringing 'Polly' forward in the mind of the entranced girl, until 'Polly' responded as strongly as Berenice had done. Dr. G. introduced 'Polly' to Berenice, describing her minutely; then calling on Berenice to aid, he drove the evil influence back into the furthermost cells of the patient's brain, and brought Berenice from the hypnotic spell."

What explanation can be offered for this "dual personality"?

William James replies:[1]

> "The past and the present selves compared are the same just so far as they are the same, and no farther. They are the same in kind. But this generic sameness co-exists with generic differences just as real; and if from one point of view I am the same self, from another I am quite as truly many. Similarly of the attributes of continuity; it gives to the self the unity of mere connectedness, or unbrokenness, a perfectly definite phenomenal thing—but it gives not a jot or tittle more."

William James bases his notion of personality on his principle "The thought is the thinker." Each new thought, which appropriates the thoughts of the past, belongs to the same personality as that of the past. When the new thought, as in the case of "Polly," does not appropriate the thoughts of the past, there is a new personality.

Our view of personality is given in Part II of this book, and need not be repeated here. We identify the person with the rational supposit—the complete, independent substance endowed with reason. According to our interpretation of personality, "Polly" is not a distinct person. "Polly" does not possess a complete substance distinct from that of Berenice. "Polly" is the product of the diseased imagination of Berenice.

And, as the disorder in the imagination is due to some disorder of the brain, which is the organ upon which the imagination depends for its images, when the brain is brought to function normally, the disorders in the imagination will

[1] *Psychology*, p. 202.

cease. Whether the methods which Dr. G. employs are the most effective, only experience can demonstrate. But it is certain that he is on the right track in trying to restore to the brain and nervous system the power to function normally.

James was inclined to regard the "soul theory" of mind as the most logical, yet could not accept it because it was "out of touch with the facts of multiple consciousness, alternating personality, etc."[1] On page 200 of the same book he wrote of the soul: "Its chief function is that of a combining medium." In Part II we showed that the chief function of the soul is to be the root principle of all life in the body, vegetative, sensuous and rational. *As the permanent principle of our states of consciousness, it combines them into a unified system.* When the brain or the nervous system becomes diseased, and the disease manifests itself in the form of multiple consciousness, the phenomenal unity of mind is disrupted, but the unity of principle remains. Berenice still possesses unity of vital principle for all forms of life within her, though the continuity of mental life appears to be interrupted. The chief function of the soul in relation to thoughts is not to combine, but to produce them. The combination naturally results from the fact that all thoughts are produced by the same subject, and inhere in it after their

[1] *Ibid.* p. 463. James bases his system of psychology very largely on his study of the abnormal phenomena of the human mind, in opposition to the principle of Aristotle, which is: "Thus by means of the straight we judge both the straight line and the crooked, the rule being the standard of both, while the crooked, on the other hand, can act as standard neither to itself nor to its opposite, the straight." (*Aristotle's Psychology,* Wallace, p. 53.)

production. This subject in the production of its rational acts is extrinsically dependent upon the organism. It is the disease of the organism which is reflected in the action of the rational powers. The normal manifestations of reason will appear when the organism, upon which reason is extrinsically dependent, is restored to its normal functions.

Immediately the disease of the organism affects the imagination; mediately, through the imagination, it affects the rational powers of the mind. Multiple personality is, indeed, a problem, but a problem for the physician, not for the scholastic psychologist.

Controlled Acts.—The acts of the imagination which are under the control of the will may be directed by an external cause to whose influence the will submits, or they may be actually and directly controlled by the will itself.

The imagination, when producing phantasms under the direction of an external cause, approved by the will, is said to be passive.

The same thing can be active and passive at the same time, but under different respects. The horse drawing a wagon is active in relation to the movement of the wagon, but passive in relation to the direction which it takes. To be passive is to be acted upon. In relation to the direction which it takes, the horse is acted upon; it is passive.

Similarly, the imagination as producing phantasms is active. As subjected to the operation of an influence which directs the stream of phantasms as effectively as the driver directs his horse, the imagination is passive.

Passive Imagination.—The imagination of the spectator of a motion picture, or of a drama, is passive. Directly the spectacle produces a percept. Through the percept, as a consequence of the laws of mental association, phantasms are aroused. Thus, by reaction to the scene before it, the imagination produces a picture of its own.

The success of the picture on the screen will depend upon the reaction which it is able to evoke in the minds of the spectators. To secure the appropriate reaction the same theme will be differently produced in different countries.

The imagination is also passive when listening to a tale, or reading it in print. But there are no visual percepts of the scene accompanying the recitation or the reading of a tale. The intellect must first grasp the significance of the tale; the imagination then constructs the scene, as best it can, under the guidance of the intellect. The child who listens to tales, as Sir Walter Scott did, and who is obliged to construct in his imagination his own motion pictures, is likely, in his later years, to have more command over the active imagination than the child who merely frequents the motion picture theater and submits his imagination passively to the stream of visual images paraded before it.

As an educator story-telling is more effective. As a business the motion picture industry is likely to be the more profitable. Its appeal rests upon a sound psychological principle, which is clearly set forth by Horace in his *Ars Poetica:*

"Segnius irritant animos demissa per aurem
Quam quæ sunt oculis subjecta fidelibus, et quæ
Ipse sibi tradit spectator."

"Those which a tale shall through the ear impart
With fainter characters impress the heart
Than those which, subject to the eye's broad gaze,
The pleased spectator to himself conveys."
—Howes.

The Imagination and Propaganda.—The imagination is the faculty which the propagandist aims to capture. In war times the citizens of the countries at war are subjected to intense propaganda which is designed to induce them to think thoughts in harmony with the purposes of their governments. Propaganda pretends to appeal to intellect alone. But the intellect is a necessary faculty; it cannot but see the truth as the truth is presented to it.

Objectively considered, the facts justify only one verdict. Both governments may be wrong. One government may be right. Both cannot be right. Yet both try to make their citizens believe that they are right. Arguments are addressed to the minds of the citizens which pretend to carry the whole truth. The citizens are urged to accept the government presentation of the facts. The acceptance of the government view depends upon the will of the citizen. To induce his will to view the facts as the government desires, the propagandist tries to effect in the mind of the citizen a phantasm which pictures his government as doing what is right. He pictures the atrocities committed by the enemy, the horrors which an enemy victory will mean for his country. He paints the

picture anew with different details as opportunity offers. The effect on the mind of the citizen is that when the name of the enemy country is mentioned the phantasms which the propagandist has framed in his imagination arise. The intellect interprets them as picturing an evil which must be avoided; the will consents to take whatever action may be necessary to avert the evil, to submit to military draft, to contribute to welfare organizations, to go on short rations. In all the countries at war the same policy is followed and with the same results.

Propaganda may be employed by a political party, a racial group, a religious organization, or an individual. In every instance the propagandist seeks to influence the will of the persons addressed, and attempts to reach the will through the imagination, to plant an image in the mind which will impel to the acceptance of the course of action proposed.

The Active Imagination.—When the imagination, free from outside control, and acting under the direction of the will, produces its own combination of images, it is called the active imagination.

As every turn taken by the driven horse is directed by the driver, so every turn of the stream of images of the passive imagination is directed by the influence to which it has been subjected.

The active imagination, on the contrary, while under the control of the will, and subject to its directive influence, has a measure of freedom. It is as free as the horse which roams about in the pasture selected for it. Poet, novelist, architect, sculptor, painter, each directs his imagination to

produce the stream of images which will visualize the object he desires to represent. The will elects the object to be visualized. The actual visualization is the work of the imagination.

While the passive imagination may be regulated with almost as much precision as the heat in a room which is equipped with a radiator, the active imagination is as variable as the weather. We can select our summer resort. We cannot choose the weather there. The will can direct the imagination to visualize an object, and no visualization may follow. At another time, when conditions are favorable, there is a deluge of images.

The Creative Imagination.—The imagination, controlled by the will, and occupied in the production of an ideal, is called the creative imagination.

The ideal is not a product of the imagination alone, but a combined product of imagination, intellect and will. The imagination supplies the stream of phantasms; the intellect puts its estimate upon their worth; the will chooses according to the verdict of the intellect.

The artist has a theme which he wishes to develop. His theme may be the heroism of the Southern Confederacy in arms, or Judith rescuing her people from the invader, or any other he may choose.

The foundation for the ideal is in nature. But nature is likely to offer no more than the foundation. Nature acts upon the mind through the senses. Memory retains the images; the imagination separates and combines them; the intellect judges of their worth; the will accepts the combination which the imagination offers, or re-

quires it to set to work again and produce another combination. The combination which finally receives the approbation of the will is the ideal.

Raphael, in a letter quoted by Scott, wrote to Count Castiglione as follows:

> "To paint a beautiful woman, I must see several, with this condition, that your lordship be near me to select the loveliest. But there being a dearth both of good judges and of beautiful women, I make use of a certain idea that comes into my mind. Whether with benefit to art I know not, but I strive to form such an ideal in my mind." [1]

Thus the ideal of Raphael had its foundation in nature. But the ideal itself was no mere representation of nature. It was nature, but nature without its defects, in so far as he was able to eliminate them.

The creative imagination can be employed in the interests of the useful arts, no less than of the fine arts. But the ideal, in relation to the useful arts, will be the ideal of utility, while the ideal of the fine arts is the ideal of beauty. To give pleasure is the purpose of the fine arts. To be serviceable is the purpose of the useful arts. If beauty can be of service it will find employment. The show-window, which is a species of advertising, is utilitarian in purpose. But show-windows are often very beautiful. The beauty attracts attention and thereby serves a useful purpose. Creative imagination is required to produce the ideal of serviceableness.

The creative imagination is said to be the forerunner of invention. But the dominant mental

[1] W. B. Scott, *History and Practice of the Fine Arts*, p. 324.

factor in invention is of necessity the intellect. The creative imagination at best can offer only a perfect image of a *possible* object. The imagination cannot solve the problems which are involved in the actualization of the possible, which is the invention properly so called.

It was not sufficient for the Wright brothers to picture themselves riding through the air in a machine. It was necessary for them to discover how to maintain themselves in the air, and to control the heavier-than-air machine.

The picture was the product of the imagination. The solution of the problem was the work of the intellect.

Booth Tarkington's "Penrod" pictured himself floating through the air like a bird. But he never solved the problem of this flight so as to be able to actualize his idea. "Penrod" just imagined. He did not reason. Reason is as necessary as imagination for invention. In fact the Wright brothers insisted on being recognized as scientists, because by the exercise of reason they had solved a scientific problem.

The Creative Imagination and Social Ideals.—The men who framed the Constitution of the United States each had his ideal of what the new Republic should be. One ideal conflicted with another. As no single ideal could be adopted in its entirety, compromise was necessary. The Constitution, as finally adopted, was a compromise which included more elements common to the ideals of all the members of the Convention than any other plan proposed.

The character of Nikolai Lenin, as influenced

by the social ideal which he cherished, is thus described by a Menshivist leader:

> "He is wholly in the grip of one idea, one passion: Revolution! And revolution means power to Lenin. He agitated and worked for a dictatorship in the party as far back as twenty years ago. But not because he is ambitious, not because he likes to be flattered and glorified, but because he regards himself as the most suitable and accurate interpreter of the ideas of socialism and revolution. He alone correctly understands Marx; therefore he alone among the socialists is entitled to head the revolution. This is his deep and indestructible conviction, as strong as that of a maniac." [1]

Lenin put his idea into execution to the extent of setting up in Russia a social order based upon the Marxian principle. The revolution which his ideal effected in the social life of Russia is one of the most striking phenomena of all history. Whether it can permanently survive in Russia, and how it will affect social order in other countries if it does survive there, are problems which agitate the minds of all the statesmen of all other countries.

Anarchists and Alexanders, visionaries and intensely practical men, the promoters of social and religious ideals, pursue a visualized goal. They reach out for the realization of their ideals as those ideals are pictured in the phantasm.

Cultivating the Creative Imagination.—Imagination is a natural power of the mind. Every person possesses imagination in greater or less degree. Every imagination can be trained. Every imagination requires training. Without training, the

[1] Isaac Don Levine, in *The Man Lenin* (Thomas Seltzer, publisher), p. 34.

marvelous imagination of Michael Angelo would have remained undeveloped. With the aid of his imagination he became the most famous painter, sculptor and architect of his age. Imagination, acting under the direction of intellect and will, constructed the ideals which he expressed in colors, marble and masonry.

To develop the creative imagination of the child it is necessary to set him a task which demands the exercise of imagination. Models must be set before him, and the accepted rules of the art explained and illustrated in a manner suited to his capacity.

In this first stage of development it is the passive imagination which is at work.

When a sufficient variety of images has been lodged in the passive imagination, and their interpretation grasped by the intellect, the mind is prepared to undertake the task of constructing original ideals. The original ideals constructed by the imagination are likely to embody the principles which make the greatest appeal to the mind.

Thus Scott, in his *History and Practice of the Fine Arts*,[1] describes the character of Fra Angelico's imagination:

> "He did not value art for its own sake but simply for the good he could do religion by its application. It was because Fra Angelico's whole life was love, diverted by his vow of celibacy from any specific object, that his imagination thus sought for and found inspiration in heaven. His Virgins are incarnations of holiness; they are the most emphatically feminine; they are to the Madonnas of other painters what Eve may be supposed to have

[1] p. 286.

been to her daughters, before the Fall—their lineaments seem to include all other likenesses, to assume to each several votary the semblance he loves most to gaze upon."

Whether the education of today *actually* offers the boy and girl the inspiration which is required for development of the creative imagination in relation to the fine arts is a question which can securely be answered in the negative. What work is done in the fine arts in our age is almost entirely copied from the works of the creative geniuses of former ages.

The constructive imagination in our age serves utility, serves it abundantly and effectively.

The art of the age expresses the ideals of the age. The ideals of our age are utilitarian. Masterpieces of the fine arts are not produced in our age, because the ideals which are their inspiration are not cherished. The difficulty is with the producer, not with the consumer. Patrons of the fine arts today are willing to pay higher prices for art products than the artists of the past ever received. But the artists of our age are lacking in the ideals which were the inspiration of Fra Angelico, Michael Angelo and Raphael. Art demands creative imagination. Is it not possible for the education of our age to set before the minds of the students in our schools the elements out of which they can fashion ideals which will inspire to the production of masterpieces of art that will rival the greatest our age has inherited from the past?

31. Besides the common sense, the sensuous memory, and the imagination, which are called the internal senses, there is another internal sensuous power of the mind, the sensuous appetite. The appetite is the mental power by which we seek to possess the good represented by the cognitive power of the mind. Every sense conveys to the mind information about the external world. This information reveals the fact that there are objects in the external world capable of imparting pleasure to the mind, if the mind, through sensation, can be brought into contact with them. These same senses also convey to the mind information about objects which are capable of causing pain. This information arouses the mind to desire the object represented as promising pleasure, and to loathe the object which threatens pain. The mind, as thus experiencing a sensuous attraction or repulsion, is called the sensuous appetite.

The mind, deriving a sensuous pleasure from the sight of beautiful scenery, from the sound of sweet music, from the taste of agreeable food, experiences a sensuous impulse to pursue these pleasures. As the agreeable attracts, so the disagreeable repels. Thus, the mind experiences a sensuous impulse to turn away from an ugly sight, a grating noise, unpalatable food, an unpleasant smell, a painful touch. This sensuous impulse is the act of the sensuous appetite.

This sensuous impulse manifests itself in the mental life of the brute as well as of man. The

brute, in fact, is dominated by this sensuous impulse, unless instinct warns it of danger. The hawk, holding in its talons the sparrow which it has captured, will release its grasp if it apprehends that its own life is in danger. But, if no danger threaten, the sensuous appetite of the hawk will compel it to retain possession of its prey. The hawk has no intellect and no free will.

Man, on the contrary, possesses free will; and no matter how strongly the sensuous appetite impels, so long as reason functions normally, the sensuous appetite cannot control his conduct. Soldiers, going "over the top," during the World War, often became so unnerved by the prospect of injury or death, that, in defiance of orders, they madly rushed back from the zone of danger. Some were severely punished for what was, at the time, regarded as a deliberate violation of orders. Later, it was realized that in such cases there was no deliberation at all. The prospect of danger had so completely overpowered the mind of the soldier that he had lost self-control. In a sense he was a mere animal fleeing frantically from danger. Reason was not functioning normally. The mind was in a state of anarchy. In such circumstances the will cannot control conduct. In every other circumstance, where the action is prompted by conscious mental impulse, the will controls.

The sensuous appetite manifests itself throughout the life of man. In the child, who has not attained the use of reason, the sensuous appetite dominates his conscious acts.

Appetite manifests itself by movement. Bodily

movements may be grouped under four heads: automatic, volitional, reflex, impulsive.

Automatic actions, such as the actions of the heart and lungs, are independent of sense perception. They are said to be controlled by the sympathetic nervous system.

Volitional acts are acts deliberately elected by the will, under the guidance of the intellect. They are executed by means of the muscles set in motion by the motor nerves of the cerebro-spinal system.

Neither automatic nor volitional acts are under the control of the sensuous appetite.

Reflex acts, such as the sudden withdrawal of the hand which has touched a hot stove, are said to be regulated by the spinal cord. The theory is that when the message is carried by the afferent nerve to the spinal cord, the cord immediately assumes control and sends back a message along the efferent nerve to move the muscles of the hand, and the hand is removed from danger. Later the report of the entire proceeding is carried on to the brain. The cord acts quickly. It does not pause for deliberation, for it is incapable of deliberation.

Most of our habitual actions, which owe their origin to deliberate choice, become quasi-reflex acts. Walking is an example. As we walk along a smooth sidewalk, we converse with the friend by our side. We give little thought to the movement of our feet. We are not required to think about them. Most of the movements of the baseball pitcher, of the prize fighter, of the musician, and of every artist or artisan, which in their

formation required so much attention of the mind, when perfected are performed with little attention. They are called acquired reflexes.

The mind must, in such operations, initiate the process, and there is at all times co-operation between the brain and the other parts of the nervous system, so that such actions are always subject to control by the will.

The reflex act is affected by the imagination, which reacts upon the nervous system, and interferes with the control of the muscles. Many a pitcher has passed a batter and has "lost control," because his imagination has interfered with normal process of the reflex act. In practice he can throw the ball where he chooses. When his imagination interferes with the operation of his nerves, no matter how earnestly he wishes to control the movement of his muscles, he cannot do it.

It is the same with the speaker. It is told of Daniel Webster that when he stood before an audience for the first time, he was stricken mute. Daniel Webster was able to speak, as history can testify. But, on this occasion, his fear of the imaginary dangers which the audience threatened, interfered with the performance of the reflex acts involved in the exercise of speech.

Singers who, through inattention, have gotten away from their score, have been known to mingle profanity with music in the vain attempt to recover the lost chord. The vocal muscles refused to reflex according to custom. A distracting phantasm was the culprit responsible for the lapse.

The perfection of the bodily habit, and the

speed with which the act is performed, will depend upon the reactions of the cord to the impression made upon the outer nerves. One prize-fighter is said to be superior to another because he has a quicker reaction time. Psychological laboratories are equipped with machinery capable of registering the reaction time of the subject undergoing experiment.

Every individual possesses a sum of acquired reflexes, which constitutes the sum of his bodily habits. His value to society as a human instrument depends upon the number and the value of these. Without these acquired reflexes the muscles of the individual would be as impotent as the muscles of the child.

But man is not merely a human instrument. Man is part brute and part angel, in the sense that he has an animal body like the brute, and a soul which is spiritual, like the angelic substance. The deliberate acts of man are not determined by the spinal cord, but by the choice of the will. When you go to the polls to vote, your marking of the ballot is a deliberate act, even if, in marking it, you are merely carrying out orders. All application of the mind to study, whether the object studied is a book or a thing, is due to the deliberate choice of the will. Our habitual bodily acts, whether we be bricklayers or musicians, are due immediately to acquired reflexes, though the will must initiate the process. It is the possession of these acquired reflexes that makes us act in a machine-like manner. It is in this sense that we can be called human instruments. When our acts are due to deliber-

ate choice, we do not act like machines, and cannot be assimilated to an instrument. When man produces acts of the rational order, his mental acts are not those of the machine, nor even of the brute animal; they are the products of the angelic part of his nature.

While the acquired reflexes enable us to perform our customary actions with speed and precision, they do not aid us to make progress. These acquired reflexes store up the experiences of the past, and make them serviceable to us. Progress results from the application of thought.

Thought invents new ways of doing things, and leads to the acquisition of new reflexes. The reflexes are the property of the animal power within us; thought is the property of the mind as spiritual.

Thus we have seen that the automatic, volitional and reflex acts cannot be attributed to the sensuous appetite. In the child, however, we can attribute to the sensuous appetite all those acts which owe their origin to conscious mental activity. In the child the will cannot function, since reason does not function. The acts of the child, which are due to conscious mental activity, usually have the character of impulsive acts.

As the child attains the full use of reason, the sensuous appetite loses its control, which then passes over to the will.

The person who has attained the full use of reason, and while actually in the possession of it, can be impelled, but cannot be compelled, to act, by the sensuous appetite.

It is the sensuous appetite in man that impels

him to eat, when his body needs food, to sleep, when his body needs rest, and to perform all those bodily acts that are requisite for the welfare of the body of the individual, and through the individual, of the race. But the sensuous appetite is unable to distinguish what is beneficial from what is detrimental. The good for the sensuous appetite is that which imparts pleasure. But not everything that imparts pleasure to the body is beneficial to the body. Deadly poison can be prepared in a very palatable form.

32. Feeling is coextensive with sensuous consciousness. Sensuous consciousness, when modified by pleasure or pain in a noticeable degree, may be either a sensation or an emotion. Sensation is the subjective side of the act of perception. While sensuous perception, and consequently sensation, is concerned with a present object, emotion may concern the past, present or future.

Once upon a time, in the pre-Volstead days, a philosopher, invited to share in a libation containing more than one-half of one per cent of the now banished beverage, not only readily consented to take part, but contributed to the joyous spirit of the occasion by a keen psychological analysis of the act. "A drink," said he, "imparts a threefold joy, the joy of anticipation, the joy of participation, and the joy of recollection."

Two of his joys, the joys of anticipation and recollection, should be ranked as emotions. His participation immediately produced a sensation, followed shortly by an emotion.

All modifications of sensuous consciousness may be pleasurable or painful. If, therefore, emotion is to be distinguished from sensation by a clear line of demarcation, since sensation accompanies the production of the percept, emotion must be assigned to the production of the phantasm. Every state of sensuous consciousness owes its existence to some movement of the sen-

tient organism. But the mental representation need not correspond to any present object acting upon or within the organism. When the mental image aroused by the action of the sentient organism is not a percept but a phantasm, the state of sensuous consciousness accompanying it, if pleasurable or painful in a noticeable degree, may be called an emotion.

An emotion may follow immediately upon a sensation, or after an appreciable lapse of time.

The abnormal youth who resolves to kill a boy for the emotion of it, experiences emotion both before and after the deed, and possibly during it.

If he uses a chisel to strike the death-blow, the sensation of striking the head is similar to the sensation which he would experience in striking any other solid object.

But the realization of the effect is different. He realizes that by his blow he has brought an end to a human life, that he has rendered a human body incapable of self-movement, that he has for all time cut his victim off from all communication with parents and friends. Accompanying this intellectual apprehension is a phantasm, and following the phantasm is a state of sensuous consciousness, pleasurable or painful, which may be called an emotion. According to the supposition, it is to enjoy this emotion that the youth commits the crime. Evidently only a very abnormal person could find any joy in such an achievement.

The percept of a present object arouses past mental images, if not of the same object, at least of objects which belong to the same category. If

the images evoked out of the past have no special significance for the person perceiving, there is no emotion. If they have a deep meaning, emotion will result.

As a young lady walks down the street, many men will see her and recognize in her a female member of the human species. That is all she will mean to them. The present percept of her does not call up in their minds a chain of images concerning her. She has no special significance for them. No emotions accompany their percepts of her. But let her fiancé see her, and his percept will call up in his mind a chain of images concerning her which have a deep significance for him. She means much, everything, to him. And all that she means to him comes into his mind at sight of her. She is the lady he loves. Love, as a pleasurable state of consciousness, possesses his mind. It is an emotion.

Emotion springs not from a single percept, but from the composite of images retained by the mind, and brought back into consciousness by a present perception.

Concerning the relation between emotion and action, William James writes, *Principles of Psychology*:[1] "We feel sorry because we cry, angry because we strike, afraid because we tremble."

James admits that his interpretation[2] is contradicted by common sense. The crying may make the emotional state more intense. But preceding the outward manifestation of emotion, there must

[1] vol. XI, p. 450.

[2] "My theory is that bodily changes follow directly the perception of the exciting fact, and that our feeling of the same changes as they occur is the emotion." (*Ibid.*, p. 449.)

be an interior consciousness of which the outward act is the expression. The apprehension of the death of a parent arouses mental images which react painfully upon the nervous system. The affection is manifested by tears. It appears to be good physiology, as well as good common sense, to say that we weep because we are sorry, that tears flow because a painful consciousness has, through the cerebro-spinal nerves, affected the nerves of the sympathetic system which control the tear ducts:

> "On the edge of the lids, near the inner angle of the eye, may be seen two minute openings, one in each lid. Through these minute canals the superfluous tears run off into the nose. * * * During a cold in the head, inflammation often closes them, and the tears * * * overflow on the cheeks. *This overflow also occurs when from pain* or any powerful emotion the tears are increased in amount so that the canals are unable to dispose of the extra supply."[1]

Passion.—Emotion, when it becomes extremely difficult to control, is often called passion.

Passion also has another meaning. It is sometimes employed to signify the propensity to a certain kind of emotion. In this sense the seven deadly sins of the Catechism are to be understood, though this list by no means contains the whole catalogue of passions, since there may be passion for good as well as for evil.

The emotions of anticipation which spring from passion may be out of proportion to the actual sensation when it is experienced. Indulgence of passion diminishes its power to satisfy. The

[1] *Anatomy, Physiology and Hygiene*, no. 332, Roger S. Tracy, M.D.

power to inhibit passion weakens by yielding. Thus passion may increase in strength, while its indulgence, by repetition, loses its attraction.

All human beings are subject to the same passions, in the sense of propensities, though not all are subject to them in the same degree. No one knows, until the emotion proper to it has been aroused, how strong any particular passion is in him. As passion prompts to the pursuit of pleasing emotions, so it prompts to flight from those that are painful.

In illustration of the working of a natural propensity, let us consider the Temptation and Fall of Eve, as related in the third chapter of the Book of Genesis.

Some people are inclined to think that the story of the Fall related in this chapter is not history. It must, then, be some sort of fiction. This interpretation would entitle the writer of Genesis to be regarded as one of the greatest psychologists of all times. He accounts for the wickedness and the sufferings of man by attributing them to a fundamental propensity of human nature, a desire to fathom the depths of the unknown. Literature which has man for its subject is imperishable only when it reveals something characteristic of the race. The curiosity to which the writer of Genesis ascribes the Fall, is natural to man. The literature which endures, appeals to the imagination. The picture so simply painted in this chapter can be visualized by the child as well as by the poet. If, then, the story of the Fall is to be taken as fiction, the writer of this chapter of Genesis must be recognized as a master in psychology and

an artist in literature, and psychology has no title to be regarded as a "new science."

We shall leave it to the theologian to determine the historic and dogmatic value of this chapter. We shall view it merely from the standpoint of psychology, as illustrating the working of a natural propensity of the human mind.

According to the story, the Serpent made a suggestion to Eve about the possibility of securing, at no cost to herself, a vast store of knowledge. The Serpent was working on the principle expressed in the aphorism of Tacitus, "*Omne ignotum pro magnifico.*" [1]

The Serpent questions Eve as a Sunday School superintendent might question a child in a catechism class:

> "Why hath God commanded you that you should not eat of every tree of Paradise?"

Eve answers like the Sunday School child reciting her lesson:

> "Of the fruit of the trees that are in Paradise we do eat:
> "But of the fruit of the tree which is in the midst of Paradise, God hath commanded us that we should not eat, and that we should not touch it, lest perhaps we die."

So far Eve is merely using her memory. Now the Serpent makes a demand upon her to employ all the powers of her mind:

> "No, you shall not die the death.
> "For God doth know that in what day soever you shall eat thereof, your eyes shall be opened: and you shall be as gods, knowing good and evil."

[1] Transl.: "The unknown is always imagined to be wonderful."

The Serpent sets himself up as a higher authority on truth and morality than God. But he does not rely upon his own claims to produce conviction. He directs Eve's attention to the apple. Eve was confronted by the first great mental problem of her existence. What should she do? The writer of Genesis does not detail her mental struggle. He pictures the results:

> "And the woman saw that the tree was good to eat, and fair to the eyes, and delightful to behold; and she took of the fruit thereof, and did eat, and gave to her husband, who did eat."

The Serpent's formula was very simple, a suggestion, a motive, an occasion. The result, as always when one is victimized by a deceiver, a heavy loss.

Before eating the apple Eve had everything she needed, sunshine, freedom, abundance, health, love, joy. Even if she could have retained all these possessions, the knowledge sought would not have been a noticeable addition. She risked all, and lost much, to satisfy her curiosity. At the moment, the unknown appeared to her of more importance than all she possessed. The possibilities pictured by her imagination deceived her. A scientific exposition by Raphael of the difference between good and evil would probably have bored her. She desired to experience what she had imagined. The reality fell far short of the picture. She plunged into what she imagined would be enjoyment, and realized only after she had taken the plunge, that she could not regain the heights she had abandoned. She had made her choice, and had to take the consequences.

Eve, before the Temptation, possessed a considerable amount of genuine knowledge, and the possibility of acquiring more. But knowledge possessed had not the same attraction for her as the mystery of good and evil. It was the mysteriousness that attracted her. As the child is not satisfied to possess its rattle, but tears it open to discover what makes the sound, and so loses his toy, Eve, not satisfied with the possession of good, chose to tear aside the veil which hid from her vision the difference between good and evil. She acquired the knowledge sought, but she lost her joy in finding this knowledge.

Eve is the typical human. He is the exception who never permits himself to surrender a known good for a pictured possibility. There are persons who will crowd to a lecture hall and deposit their twenty-five dollars to be told "how to get rich quick." The lecturer himself is a living illustration of how to get money. If the members of the audience have all the natural gifts required for the work, they have only to study the lecturer to learn how to get money. If they wish to know how to produce wealth, they will have to go to school, or enter a factory, or work on a farm. The school and the factory and the farm are not nearly so interesting as the lecturer. But they are more efficient.

It is the lure of the unknown that leads men into secret societies and into the assumption of obligations of which they can have no adequate knowledge in advance.

It is the lure of the unknown which induces men to strive for the overthrow of the existing

civilization without any assurance that they have a better to substitute for it.

Sometimes it is the charm of mystery which lures to indulgence in drugs and other vices.

Like Eve, each in turn, and in his own way, receives a suggestion, experiences a motive, is confronted by an occasion, and falls. He usually gains knowledge, but pays for this gain by the loss of possessions which were a source of genuine joy. Like Eve, he may have the satisfaction of pointing to another as the source of the suggestion. But if he ever learns the lesson which the story of Eve teaches, he will know that he was lured to his fall by the imagined charm of the unknown.

Eve apparently had not the slightest notion that she had a natural propensity to peek into the realm of forbidden knowledge until subjected to the test.

Nor do we, her children, realize the number and force of our natural propensities, until they are set in motion by the attraction of objects which promise gratification.

In each individual there is usually one passion which is stronger than all others. It is largely due to heredity. By some writers it is called the "predominant passion." It requires no slight amount of introspection and observation for one to determine what is his "predominant passion." Whether he discovers it or not, it will remain with him to the end, "the ruling passion strong in death."

Classification of Emotions.—All pleasurable states of consciousness are associated with objects that

are catalogued as good; all painful states, with objects catalogued as evil. A good is something desirable. Evil is some absence of good.

Love is a general attraction towards good. Love is the fundamental element in all emotions. It takes various forms, depending upon the relations of the object sought to the person seeking.

If an object is proposed to us as a future good, we desire it. If it is in our possession as a present good, we enjoy it. We hate the evil which deprives us of it. If the evil only threatens to overtake us in the future, we seek to avoid it. When we lose an object we love, we become sad. If the good appears attainable we indulge in hope; if unattainable we fall into despair. If we are threatened with an evil which it is difficult to avoid, we fear. If we realize that we can overcome the evil without great danger, we take courage. If the evil actually overtakes us, we become angry.

Add intensity to these emotions, and pleasure becomes delight, sadness increases to dejection, hope changes into presumption, fear into cowardice, anger into fury and madness.

The most distinct manifestations of love are seen in the family. It is love that unites husband and wife. The conception of every child is due to love. It is love that brings the child into the world alive. It is love that nourishes and clothes and educates the child, and provides for it until it is able to care for itself, when it turns about and renders to its parents the care which they require, and the services which they can no longer perform for themselves.

Emotions may be self-regarding or altruistic.

Pride is a self-regarding emotion which implies inordinate self-esteem. It often governs the minds of great public men, leading them to the commission of blunders which tarnish their reputations and sadden their lives.

Vanity springs from the same source, though vanity is usually associated with weakness, and pride with strength.

Both remorse and shame originate in self-love and reflect the suffering which the man endures who realizes that his conduct has been reprehensible.

Sympathy is an altruistic emotion. While pride is based upon self-love, sympathy is based upon the love of one's fellow-man.

These divisions are merely suggestive of the possible classifications of emotions. By abstracting from all but the dominant element in consciousness, emotions may be classified variously. Common classifications are: the sensuous, intellectual, aesthetic, moral.

Novelty, surprise and wonder are commonly cited as examples of the intellectual emotions. The desire for the enjoyment of these emotions drives men and women from one part of the world to another, from one mental toy to another, in the vain hope of obtaining the satisfaction which nothing finite can produce.

The emotions of admiration, fear and awe are awakened by the contemplation of the beautiful or sublime. These might be called aesthetic emotions. The ludicrous is the antithesis of the sublime and excites laughter.

The emotion which accompanies the impulse to fulfill a recognized obligation may be called a moral emotion.

Emotion and Conduct.—It is emotion that makes life interesting. Only the preacher who can arouse emotion speaks to crowded pews. An interesting conversation, play, spectacle, book, person, is one that arouses emotion. Literature depicts emotion and excites it. Newspaper editors realize the value of it. The sensational sheet makes its appeal to the emotions rather than to reason—and sells. The individual life zigzags, through a neutral zone, from one emotion to another. Emotion is the prompting, though not the compelling, cause of every base offense against the moral law, and of every noble deed that has relieved distress or promoted human welfare. Emotion is perhaps the chief of the penalties paid by the wicked for their offenses, and among the principal rewards which the virtuous receive for their good deeds in this world.

The attitude which our wills should assume towards emotion is clear. If we wish to do our part in life, and leave the world better for our having been in it, our wills must resist the appeal of the emotions which prompt to moral evil, and accustom themselves to be guided by the emotions which tend to what is for our own welfare and the welfare of others.

33. This is perhaps the best place to discuss instincts.

In the *Standard Dictionary* instinct is defined as follows:

> "Instinct is the guide of animal life, imbedded in the organic structure of the animal, as reason is the guide of rational life. It has been said to be *in* the animal, but not *of* it. It is unlike reason in pushing unintelligently towards its end, in attaining at once to perfection in its work, and of being capable of development and progress."

In general, mental powers are of two sorts, cognitive and appetitive. The *Standard* classes instinct as a cognitive power, analogous to reason in man. In thus classifying instinct, the *Standard* is in harmony with scholastic philosophy, which defines instinct as the *vis æstimativa,* the sensuous power of apprehension by which the brute animal is enabled to perceive what action is appropriate to its nature.

The characteristics of instinct, as the *vis æstimativa,* are: its cognitive aspect, its supreme value to the animal, its independence of previous experience and training, its incapability of development and progress. Animal instincts cannot be produced by training, nor can those that exist be educated as the mental powers of man are educated.

As an illustration of instinct as the *vis æstimativa,* we may cite an admirable example from the

pen of Rev. John Gerard, S. J., in *Science and Scientists*:[1]

> "What man could do only with much elaborate training, animals do unhesitatingly and at once; and while it is simply out of the question to suppose that they have the conscious knowledge by which he would have to steer, they arrive at the goal by a straighter and surer path:
>
> 'Sure never to o'ershoot, but just to hit,
> While still too wide, or short is human wit;
> This, too, serves always; reason, never long;
> One must go right; the other may go wrong.'
>
> —POPE, *Essay on Man*.
>
> "To give in illustration the oft quoted example: Wasps of the genus Sphex lay up with their eggs a store of animal food for the benefit of their young when hatched. It is desirable, from their point of view, that the victim chosen for this unhappy function, should be rendered helpless, but at the same time not killed, that so the provisions may keep fresh. This is effected by stinging him in one or more nerve centers, thus paralyzing him for motion, but not immediately affecting his life. One species of Sphex, for instance, preys upon crickets, in which three nerve centers have to be thus dealt with, to reach one of which the neck has to be stretched back, while the others are minute spots in other parts of the body. For a man to do this would require the nicest knowledge of anatomy. Yet the Sphex performs the operation with unhesitating accuracy, and a young mother doing so for the first time, cannot be guided by experience, while she certainly has not an elder instructor at her elbow."

In contrast to the self-sufficiency of the brute at birth, is the complete dependence of the human infant upon other humans, both for existence and for mental development, as is well expressed in the statement of W. J. Powell:

[1] p. 102 (John Murphy and Co.).

> "Every child is born destitute of things possessed in manhood which distinguish him from the lower animals. Of all industries he is artless; of all institutions he is lawless; of all languages he is speechless; of all philosophies he is opinionless; of all reasoning he is thoughtless; but arts, institutions, languages, opinions and mentations, he acquires as the years go by from childhood to manhood. In all these respects the new-born babe is hardly the peer of the new-born beast; but, as the years pass by, ever and ever he exhibits his superiority in all the great classes of activities until the distance by which he is separated from the brute is so great that his realm of existence is in another kingdom of nature."[1]

Books on "scientific" psychology usually include under "Instincts" such natural tendencies as collecting, curiosity, day-dreaming, emulation, imitation, puzzle, inquisitiveness, acquisitiveness.

The word "instincts" is thus used in two distinct senses, first, to signify the *vis æstimativa* of the mere animal; second, to signify certain tendencies[2] revealed by the human mind, which differ in relation to their origin, object and character from the animal instinct.

Words are arbitrary signs of thought, and, ordinarily, it makes little difference what word a writer employs, providing he gives his definition of it. In this case, however, there is a danger that as the word is used in two different senses, the senses may be confused, as they are often confused by those who view the word superficially. Because of this confusion it is made to appear

[1] Quoted by Dr. W. C. Bagley, in *The Educative Process*, p. 8.
[2] "Every instinct is an impulse." James, *Principles of Psychology*, vol. II, p. 385.

that the mind of man and the mind of the brute are the same in kind, and different only in degree.

This is Darwin's view of mind, and is due in a measure to the confusion which results from the employment of the word "instincts" concerning the mind of man and the mind of the brute, as if it were always applied in the same sense to both.

The instinct of the brute is a directive power of its mind, of a cognitive character, as is illustrated in the instance of the sphex.[1] The mental tendency to perform an act is quite distinct from the mental power which directs the animal in the performance of it. The tendency is a manifestation of an appetitive character. The direction of the physical powers to the attainment of the object to which appetite impels, is the work of instinct, as expressed in the definition taken from the *Standard*. Appetite and instinct are not distinct substances. They are the one mind of the brute functioning in different ways. They may function at the same moment. But we are capable of considering the functions separately, be-

[1] "Now we must observe that as to sensible forms there is no difference between man and other animals. For they are similarly altered by the extrinsic sensible. But there is a difference as to the above intentions: for other animals perceive these intentions only by some natural instinct, but man by means of the collation of ideas. Therefore the power which in other animals is called the natural estimative, in man is called the cogitative, which by a sort of collation discovers these ends. Wherefore it is also called the particular reason." (*Summa*, Q. LXXVIII. A. 4.)

cause we know that they can exist apart. Many tendencies are common to brute and man. The actions to which these tendencies prompt are, in the brute, subject to the direction of instinct, while in man, if they are not mere automatic or reflex acts, they are subject to judgments controlled by the will. Thus animal tendency has a wider range than animal instinct.

Both brute and man have sensuous powers which enable them to apprehend the utility of an object of sense. The brute perceives without comparison, man by comparison. The apprehension of the brute is "natural," inerrant. Man's apprehension by comparison is exposed to error.

This sensuous power of perception by comparison, the "cogitative," is evidently not instinct in the sense of "tendency." The "cogitative" belongs to the cognitive order of mental powers. The "tendency" is a manifestation of appetite.

> "For the act of the apprehensive power is not so properly called a movement, as the act of the appetite. * * * The operation of the appetitive power is completed in the fact that he who desires is *borne towards* the thing desirable." [1]

Professor James, in his second volume of *Principles of Psychology,* has a splendid chapter on natural human tendencies under the title "Instincts."

If we prescind from the implied [2] similarity of the mind of man and the mind of the brute, we can enjoy his penetrating observations concerning the character and value of natural human

[1] *Ibid.,* Q. LXXXI. A. 1.

[2] "We can only interpret the instincts of brutes by what we know of instincts in ourselves." p. 386.

tendencies. Speaking of natural tendencies under the title "Instincts," he declares that they are "implanted for the sake of giving rise to habits, and "that, this purpose once accomplished, the instincts themselves, as such, have no raison d'être in the psychical economy, and consequently fade away."[1]

The impulse to act which is attributed to instinct need not in man necessarily result in the execution of the act to which the impulse is felt. The individual can acquire the habit of yielding to every impulse, good or bad, or he may resist the impulse when the act to follow is not automatic or reflex.

The murderer and adulterer yield to evil impulses. We all resist some of our nobler impulses. So long as the mind is in a normal state, impulse cannot control conduct. In the normal person conduct is determined by choice. To ascertain the determinant of action in the abnormal person, the particular character of his abnormality must be established.

"Instinct" and "instinctive" are terms which are frequently employed in relation to man. Our literature abounds in instances of such usage. But we must remember that these words are not univocal,[2] but ambiguous, when applied to man and brute.

[1] *Ibid.*, p. 402.

[2] "A name is univocal with respect to all things of which it can be predicated in the same sense; it is equivocal as respects those things of which it is predicated in different senses." (J. S. Mill, *System of Logic*, p. 44.)

"An equivocal expression is as a rule intentionally

Education does not improve the instincts of the brute—the directive power which guides it in the performance of the acts suited to its nature. The acts of brute instinct appear to be purely reflex acts, even though accompanied by sensuous consciousness in the mind of the brute.

The boy and girl, on the contrary, can be taught to control their conduct, to take advantage of their tendencies to perform good deeds, to resist the tendencies to commit evil deeds. To teach them how to acquire this control and to induce them to exercise it, is to "educate their instincts," which is one of the primary objects of our entire educational system.

deceptive, while an ambiguous utterance may be simply the result either of a want of clear thought or of adequate expression." *(Standard Dictionary.)*

By some psychologists it is believed that the term "instinct" can be predicated of the infant and of the brute in the same sense. Our discussion concerns the human mind which has attained the use of reason, as is evident from the entire context. In the mind that has attained the use of reason there are many natural tendencies which are commonly called instincts. But these tendencies are quite different from brute instinct, which is a mental power of the cognitive order analogous to reason in man. Thus, the word "instinct," as signifying a natural tendency, which is a manifestation of appetite, and as signifying a mental power analogous to reason in man, is used in different senses. Even if it were established that in man there are instincts of the genuine animal type, it would still be true that the word instinct, as applied to man and to brute, is employed to signify different things, a mental power of the cognitive order, and a mental tendency or movement of the appetitive order. As thus applied to brute and to man, it is not a univocal term.

The instinct for fighting, as Miss Norsworthy shows,[1] can be controlled and directed, without being suppressed, to the benefit of the individual himself and of the nation to which he belongs. So for all other natural tendencies. Books on educational psychology, such as that by Miss Norsworthy, furnish very valuable suggestions for taming these tendencies and making them serve the individual and society.

Among the human instincts the tendency to self-preservation is most prominent. This is illustrated in the proverb "Self-preservation is the first law of nature." There is hardly a point beyond which man and woman will not go to preserve life. They become cannibals when all other means fail. And yet this tendency is not overpowering. Hunger-strikers, in prison, have faced death when food in its most tempting form was within their sight. Lord Mayor MacSwiney of Cork carried on his hunger-strike for more than sixty days, and finally died from the effects of it.

The instinct of reproduction which manifests itself in the form of sexual impulse is another of the native tendencies. It is so powerful that though individuals may go through life without yielding to it, yet it is morally impossible for every member of the race to do so. It insures the perpetuity of the human race.

The craving for social intercourse is another native tendency of the first importance. Hardly a greater torture can be inflicted upon a human being than solitary confinement. Man's horror of solitary confinement, and the effects which it pro-

[1] *The Psychology of Childhood*, p. 57.

duces upon its victims, are evidence that the craving for social intercourse is a natural tendency. This instinct does not determine who the individual associates must be. But it does clamor loudly for some companions, and for agreeable companions.

The play instinct is not confined to the child, but manifests itself through life. The infant wants its rattle, and the old man his game of cards. Boys and young men go in for vigorous sports. Girls and women have amusements of their own. Nature impels all to some relaxation under penalty of a nervous breakdown.

The list of natural tendencies which are called instincts might be indefinitely extended. They deserve to be called natural tendencies [1] because they are not characteristic of any one individual, but of all the members of our race. They belong to our nature. Through them nature impels us to do what is best for the individual, and, through the individual, for the race. But these instincts are themselves irrational. To subserve the interests of the individual and of the race they must be bridled and brought under the guidance of reason.

The performance of the particular act to which instinct impels is under the control of the will, so long as the mind functions normally. When

[1] The same natural tendency under different aspects may be called a passion or an instinct. It is called passion as prompting to action which tends to produce emotional satisfaction, whether beneficial or detrimental. As prompting to action which tends to promote the welfare of the individual, and, through the individual, of the race, it may be called instinct.

passion sweeps away control, the act performed becomes a reflex act, and is not voluntary in the strict sense. The act so performed is the act of a man, but not a human act, since a human act, properly so called, is a voluntary act, a free act.

When it is said of a man that he has the instincts[1] of a gentleman, it is meant that he has acquired so keen a perception of the appropriate, and so complete a mastery over his natural tendencies, that his conduct is such as to win the approval of all. "A gentleman is one who never gives offense," says Cardinal Newman. Perhaps there have been few who have acquired so perfect a control over their natural tendencies that they could qualify as gentlemen according to the Cardinal's definition. But there are many who approach so closely to this ideal, that all of us are willing to concede them the title.

Girls and boys are ladies and gentlemen in the making. They are now repeating the acts which are the bases of those habits which will characterize them in the future. By resisting the tendencies which are natural, and good in their nature, but inopportune, and harkening to those which prompt to actions suited to their age, conditions, and ideals, they are "educating their instincts," and shaping their characters. When the noviceship of social life has passed, these "educated instincts" will be guardians of propriety, warning against danger, inciting to good, aiding, but not dominating, the character they have helped to form.

[1] "Instinct" is here considered by some to be used analogically.

PART IV

PHENOMENAL PSYCHOLOGY

The Phenomena of the Rational Order

"All the acts which Damascene enumerates belong to one power—namely, the intellectual power. For this power first of all only apprehends something; and this act is called *intelligence.* Secondly, it orders what it apprehends to the knowledge of something else, or to some operation; and this is called *intention.* And when it goes on in search of what it intends, it is called *invention.* When, by reference to something known for certain, it examines what it has found, it is said to know or to be wise, which belongs to phronesis or wisdom; for *it belongs to a wise man to judge,* as the Philosopher says. And when once it has obtained something for certain, as being fully examined, it thinks about the means of making it known to others; and this is the ordering of interior speech, from which proceeds external speech. For every difference of acts does not make the powers vary, but only what cannot be reduced to the one same principle."[1]

In this passage we have a brief description of the functions of the intellect.

Intellectual Apprehension

34. The most elementary intellectual act, and the one first mentioned by St. Thomas, is intellectual apprehension. The following instance may help to illustrate its meaning:

An enterprising reporter in pursuit of a "story" went through his town offering genuine

[1] *Summa,* Q. LXXIX A. 10. R. Obj. 3.

silver dollars for seventy-five cents apiece. He succeeded in selling one or two, but nearly everybody he approached declined to take advantage of his generous offer. They were all afraid there was some trick connected with the offer, and refused to allow themselves to be made the victims of a joke. Of course, what really happened was that they refused an opportunity to make a good bargain.

What did they see and feel when they handled the silver dollars?

Evidently they saw and felt what they always see and feel when they handle silver dollars, for the dollars were genuine.

And they had the same intellectual apprehension which they always have when they see or feel silver dollars.

Intellectually they apprehended that the silver dollars had the color and weight and stamp which they associate with silver dollars. The silver dollars were acting upon their mental powers on this occasion, just as they had always acted on every other occasion. The difference was not in the silver dollars, or in their action upon the mental powers, but in the circumstances under which the dollars were presented. They knew that counterfeit dollars were possible, and they could not believe that the man making the offer would make it unless the dollars were counterfeit. So far as the dollars themselves were concerned, they knew just as much and just as little

about them as they knew about any other silver dollars they had ever accepted.

The persons to whom these dollars were offered performed a whole series of mental acts in relation to them. When they related the story to their friends each gave his argument for refusing the offer.

The argument was the expression of his reason for rejecting the offer. Involved in the argument were many propositions which expressed judgments. And involved in the judgments were apprehensions.

The intellectual apprehension, as distinguished from the judgment, is an intellectual representation of an object. The judgment affirms or denies something about the object represented. Reason finds a cause for judging one way or another.

The intellectual apprehension of the silver dollars neither affirmed nor denied anything about them. It simply represented them.

We do not mean here to affirm that we actually have such apprehensions without having at the same time some judgment about the object apprehended. But when we analyze our mental activity, as a chemist analyzes a compound which is submitted to him, we find that the ultimate element of reasoning and judgment is intellectual apprehension.

When approached by the reporter and offered the dollars at a bargain price, each man perceived something by his senses, and apprehended something by his intellect.

By his sight he perceived color. By his intellect he apprehended colorness. The intellect al-

ways apprehends what the senses apprehend, but in a different way. The senses apprehend the particular; the intellect apprehends the universal. The senses apprehend the "it." The intellect apprehends the "itness of the it."

For every feature of the silver dollar perceived by the senses, there is a corresponding intellectual apprehension.

35. The Powers Which Produce the Intellectual Apprehension.—Phenomenal psychology is interested in the "how" of our mental products. How do they originate? Our present interest, therefore, in the intellectual apprehension of the silver dollar concerns its origin.

The various hypotheses which can be formed concerning the powers which produce the intellectual apprehension, except the scholastic explanation, can all be reduced to one or another of the following theories:

I. Intellection is a product of the activity of the organism.
II. Our intellectual apprehensions are innate.
III. They are determined for us by God or by some created spirit.
IV. They are produced by some "unitary being" which is not the soul.
V. They are formed by the mind by the addition of subjective forms to the content of sense perception.

OBSERVATIONS:

I. The universal character of the intellectual apprehension makes it impossible for it to be a

product of organic activity. Such products are necessarily particular, since the organ which produces them is extended. There can be no more universality in an organic product than in a photograph.

II. We have no right to affirm that we have any innate ideas. Consciousness offers no support to such a supposition. On the contrary, consciousness affirms that all our intellectual apprehensions are somehow derived from sensation.

III. The reasons against the second hypothesis are equally valid against the third.

IV. There is no evidence of such "unitary being" distinct from the soul.

V. The intellectual apprehension which is universal in representation, cannot be produced by adding subjective forms to the content of sense perception. The percept is already particular because the aspect of the object which it represents is particular. While this particularity inheres in the representation, nothing that the mind can add will be able to universalize it. On the contrary, the added notes can merely make it more particular.

Some other explanation, therefore, must be found, if possible, which will harmonize with the known character of intellectual apprehension. As such we offer the scholastic explanation.

The Scholastic Explanation.—The explanation given by St. Thomas of the formation of the intellectual apprehension has been adopted by nearly all scholastic psychologists. But this does not

mean that they regard the explanation as having demonstrative force. As Maher expresses it:

> "It is, therefore, an hypothesis put forward to give a fuller account of certain well-established facts; and its value is to be measured like that of any other hypothesis by its success in explaining the phenomena." [1]

Beyond the fact that the mind exercises the two-fold function of abstracting the universal elements which are contained fundamentally in the percept or phantasm, and of forming out of them the intellectual apprehension, there is little agreement among the scholastic psychologists.

Some hold that the powers which perform these functions are one and the same; some maintain that these powers are really distinct from each other.

They are equally at odds with one another concerning the rôle which the phantasm plays in the production of the apprehension. Some maintain that it acts somehow as an efficient cause.

Those who hold that the phantasm is an efficient cause insist that it is not the principal cause. Some maintain that the phantasm acts as an instrumental, others that it acts as an exemplary cause.[2]

But upon the function of abstraction by some

[1] *Psychology*, p. 304.

[2] For one who wishes to penetrate more deeply into this subject there is an exhaustive treatment of it in *Institutiones Philosophicae Psychologiae Pars Secunda*, by J. J. Urraburu, S. J.

mental power they are nearly all agreed, and this mental power they call the *active intellect.* The elements abstracted from the phantasm,[1] considered precisely as abstracted, and carried over to the potential intellect, not yet the completed intellectual representation of the object, is called the *species impressa intellectualis.* The completed intellectual representation, the concept, is called the *species expressa intellectualis,* and is attributed to the potential intellect.

The proof for this function is a proof by exclusion. No other explanation can solve the problem.

The Facts:

I. Bodies existing outside of us make impressions upon our senses. Our senses react by forming percepts of these objects. The percept is a sensuous representation of an object. The object acting upon the senses is material. The sensuous representation is an organic product.

II. The intellect is a spiritual power. This spiritual power forms spiritual representations of the material objects which affect the senses. These spiritual representations are the intellectual apprehensions.

An Assumption: The material cannot by its own power produce an effect upon the spiritual.

A Principle: There is no effect without an adequate efficient cause.

The Problem: How can the spiritual intellect

[1] In Scholastic Latin the word *phantasma* is employed to denote the sensuous representation of an object, whether the object be present or absent.

obtain the elements of its apprehensions from the sensuous representations of the mind?

The Scholastic Answer: Every attempt to solve this problem except by recognizing that the mind possesses the power to abstract the universal elements which exist potentially in the sensuous representation (*intelligibile in potentia*) ends in failure. Therefore, this one explanation which does not end in failure must be accepted.

St. Thomas gives the following reason for recognizing the abstractive function of the intellect in the production of the apprehension:[1]

> "But since Aristotle did not allow that forms of natural things exist apart from matter; and as forms existing in matter are not actually intelligible, it follows that the natures or forms of sensible things which we understand are not actually intelligible. Now nothing is reduced from potentiality to act except by something in act; as the senses are made actual by what is actually sensible. We must, therefore, assign on the part of the intellect some power to make things actually intelligible, by the abstraction of the species from material conditions. And such is the necessity for an active intellect."[2]

In the interpretation of the process by which this abstraction is effected, there is no agreement

[1] Q. LXXIX, A. 3.

[2] An automobile standing at the curb has the potentiality of transporting passengers, but, while standing, is not actually transporting them. Actually to transport them it must be "reduced from potentiality to act." The chauffeur, pressing upon the pedal, is "something in act." By his activity the machine is set in motion. Sensuous representations are potentially, not actually,

whatever among scholastics, except that in the process the active intellect is the principal efficient cause, and that the sensuous image, the phantasm, as they call it, somehow concurs.

The principle of efficient causality requires that there be some power in the soul capable of exercising the function attributed to the active intellect. The universal elements contained potentially in the sensuous image, we must be abstracted, or perhaps we should say extracted. For the abstraction of which St. Thomas speaks is not mental precision, but the extraction, from a mass of notes peculiar to an individual, of the small group which are common to an entire class. From the act of abstraction a spiritual product issues. So far as experience testifies, the material does not produce the spiritual. There must be a proper proportion between the cause and the effect. Since the effect is spiritual, the cause must be spiritual. There must, therefore, be in the spiritual soul some power capable of exercising the function of abstracting the potentially intelligible from the sensuous image, which is an organic product. This spiritual power is what is called the active intellect.

The function which is here ascribed to the ac-

intelligible. To be made actually intelligible, they must be "reduced from potentiality to act" by "something in act." That "something in act" which makes the sensuous representations actually intelligible is called by St. Thomas the active intellect. The function exercised by the active intellect is explained in the following paragraphs.

tive intellect is one which must be performed by some mental power. The argument used by St. Thomas is an argument from analogy. The intellect bears to its object a relation similar to that which the sense of sight bears to the object of vision. Now the eye cannot see an object unless it is visible. Unless the object reflects rays of light to the eye it will not be seen. The reflection by the object of light waves is not vision. Vision is an act of the sense of sight, not of the object. But the act of vision is impossible until the object has somehow acted upon the organ of sight. Before acting upon the sense of sight the object is *sensibile in potentia,* potentially sensible; when by reflecting light waves to the eye it produces an impression of itself upon the eye, it becomes *actu sensibile,* actually sensible.

The intellect, like the eye, requires an impression from the object. As the object is represented in the phantasm it is *intelligibile in potentia,* potentially intelligible, as a colored object is potentially visible in the dark. To be made *actu intelligibile,* actually intelligible, the object, as represented in the phantasm, must impress itself somehow upon the intellect. As an organic product the phantasm is material, while the intellect is spiritual. How can the material act upon the spiritual? It is assumed that the material cannot act upon the spiritual. It is useless to attempt to injure an angel by shooting at it, or by hurling a hand-grenade at it. Matter, of itself, and by its own power, is impotent to make any impression upon a spirit. The substance of the soul, like the angelic substance, is spiritual.

The problem of getting the phantasm, an organic representation, into contact with the spiritual faculties of the soul, is not quite so difficult as it would be to explain how you can hit an angel with a shotgun. The shotgun and the angel are not connected with each other in any way. They belong to two distinct orders of existence, and there is no actual bond holding them together, and subjecting the spirit to the influence of matter.

Descartes' problem was just this, to explain how the body, a mere machine, could by its activity produce an effect upon the spiritual soul. For St. Thomas the problem was not the same. The soul, as Descartes apprehends it, does not enter into an intrinsic union with the matter of the body. In the philosophy of St. Thomas the soul is one of the essential constituents of the body, the active principle of all its life. Thus, in the philosophy of St. Thomas the phantasm is not separated from the intellect by the distance which separates brain action and intellectual action in the philosophy of Descartes.

There is an actual bond bringing phantasm and intellect into contact with each other, and subjecting the intellect to the influence of the phantasm. The intellect is a power of the soul. The phantasm is produced by the activity of a power of the soul. Intellectual power and sensuous power are not one and the same power, but they are powers of one and the same thing, the soul. It is because all the sensuous powers of the mind, and all the rational powers of the mind, are powers of the soul, that the influence of phantasm

upon intellect is not so great a problem as it would be to explain how a charge of buckshot could hit an angel. The object of cognition, through the phantasm, has already been grasped by one of the powers of the soul. It is now necessary to explain only how it can pass over to the possession of another power of the soul.

Evidently a good deal of work must be done somehow by the various powers of the soul to derive the apprehension from the phantasm. The phantasm, as a representation, is totally particular. The intellectual apprehension, as a representation, involves the universal. The phantasm, as the product of an organic faculty, is material. The apprehension, as the product of a spiritual faculty, is immaterial. *A representation which is universal can be derived from one that is particular only by extracting from the mass of notes which tie the representation down to a particular object those notes which are common to many things.*

Since the sensuous and intellectual powers belong to two different orders, the one class exercising their activity through matter, the other intrinsically independent of matter, the abstractive power must belong to the spiritual order.

From the phantasm the active intellect abstracts the notes common to many objects. It is out of these notes thus abstracted that the potential intellect fashions the apprehension.

If the intellect is a spiritual power, and we believe that that point has been demonstrated, then some such explanation as that contained in the

scholastic system must be admitted. There must be abstraction from the sensuous representation of the notes which make up the content of the apprehension. The abstractive function must be exercised by a spiritual power. The sensuous power is no more capable of intellection than is the telegraphic instrument. Following upon abstraction there must be intellectual perception. Thus the functions ascribed to both the active and the potential intellect are essential to the production of the intellectual apprehension. This explanation harmonizes with all the facts to be explained. It is the only explanation which does harmonize with all the facts to be explained.[1]

In this section we are interested only in determining the powers by which the intellectual

[1] Our presentation of scholastic terms and opinions is necessarily incomplete. But, brief as it is, it may be excessive. These terms and opinions, burdened as they are with the accumulated dust of the ages, are, perhaps, better calculated to conceal truth than to reveal it to the modern mind.

The essential facts are clearly and simply set forth in the passage from St. Thomas. To have a concept of a material object, the intellect must somehow be brought into contact with it. The intellect is brought into contact with the material object through the sensuous representation. From the sensuous representation the intellect abstracts the elements out of which it forms its concept. As exercising the power of abstraction the intellect is called the active intellect. As forming the concept out of the elements abstracted from the sensuous representation, the intellect is called the potential intellect. The active and the potential intellect are not distinct substances, as was said in Part II (p. 114).

apprehension is produced. In the following sections we shall consider the formation of the several sorts of apprehensions.

36. Universality in the Intellectual Apprehension.— When the senses apprehend an object the intellect always apprehends at least one feature of it, and usually several features. The intellect always apprehends at least *thingness,* thus enabling the intellect to form the judgment: "This is some thing."

"Thingness" is that by which a thing is a thing. This note is common to all things, finite and infinite. The apprehension of mere "thingness" does not enable the intellect to place the object in any category. It is an abstraction which transcends all classification, and is therefore called a "transcendental" apprehension.

Usually the mind is able to abstract other notes besides "thingness." From every percept, besides "thingness," the intellect also abstracts "materiality." Usually, also, the intellect apprehends "inanimateness" or "animateness." It apprehends the object presented to it as non-living or living. Among the non-living it distinguishes one feature from another. To the person familiar with dollars and doughnuts, the intellect abstracts from its percepts "dollarness" and "doughnutness." In particular cases the intellect may hesitate to affirm its apprehension of the object.

The intellect, at least in its developed stage, is constantly apprehending the relationships which exist between one thing and another, between one feature and another.

Every apprehension represents its object as having a relation to something else, as sustaining something else, a substance, or as sustained, an accident.

Every complete object perceived by the senses is apprehended by the intellect as a substance. All the other apprehensions concerning the same object represent some feature of it, something that has a relation to it; they are its accidents. Every object perceived by the senses is represented by the intellect as modified by the possession of quantity, quality, as being in place, in time, as having a posture, as exercising activity, or as subject to modification by the activity of some other thing; perhaps as garbed in some style.

These various apprehensions are grouped according to the features which they represent. By the grouping of the apprehensions, the relations of the features apprehended are determined. The grouping determines the relations of the features to one another as apprehended, not as they are in their objects.

The definite groups to which the intellect assigns its apprehensions are called in the Aristotelian philosophy "categories." Every object, and every feature of an object, as apprehended, is classified by being given a place in some category.

The category may mean either the abstract apprehension under which the object is classified, or all the divisions and subdivisions of it which are made by the addition of other features. The added features increase the content of the ap-

prehension, but limit its extent. Thus by adding to "substance" material, living, sentient, rational, we have the concept "man." "Man" belongs to the category "substance"; but because of the notes added to "substance," the content of the concept is increased, and its extension limited, so that while "substance" can be predicated of all complete objects, material and immaterial, "man" can be predicated of only a particular class of these objects.

Each of the ten categories has an apprehension which is the most abstract apprehension consistent with classification. The only higher abstractions are the transcendentals, being, unity, truth, goodness, which represent properties common to all things, and not peculiar to any class.

The most abstract apprehension of the category is called the highest genus. The less abstract apprehensions of the same category have the relation of species to this genus.

37. The Process of Forming the Specific Apprehension.—The generic or specific apprehension is called a concept. The word concept involves an analogy. The mind is regarded as the womb in which thought is conceived. As we shall see later, the term "concept" is also applied to the intellectual apprehension of an individual object.

A concept is formed by combining in a single representation several intellectual abstractions. In this way without conscious effort the child forms its concepts of the various articles with which it comes into contact. It learns how to distinguish a chair from a table, a table from a

bed, a cup from a saucer, a knife from a fork. Of such objects the child possesses concepts sufficiently definite to enable it to recognize each distinctly. The content of the primitive concepts may be very slight. Experience offers occasion for the formation of judgments concerning these objects. The knowledge acquired by these judgments is added to the primitive concepts. A scientific knowledge enriches the concept by adding to its content. The child merely knows that the knife is made of something hard and can be used to cut. Later the child may learn that it is made of metal, and probably will adopt some rough and unreliable criterion to distinguish one metal from another. The scientist can not only distinguish one metal from another by a sure test, but he also knows the properties of each metal. The increased content of the concept results from the judgments formed about the object.

We can illustrate the formation of a specific concept in mature life from an Englishman's experience at a baseball game:

When the Englishman sees the term "baseball game" his intellect necessarily abstracts certain notes from the words before him. Each word has a connotation. He knows what a base is, what a ball is, and what a game is. But does he, therefore, understand what a baseball game is? The baseball game is a specific sort of game. Does he apprehend its specific character? It is quite unlikely. Let us observe his mental processes in the formation of the specific concept.

Omitting the jokes which it is customary to associate with the Englishman at his first base-

ball game, we shall seat him in the grandstand of a great baseball park, in the company of an American who is pleased to answer any question he may wish to ask. Naturally he observes the structure of the grandstand, the difference between grandstand and bleachers, the scoreboard, the diamond, the spectators, players, balls, bats, gloves, and whatever other paraphernalia may be used. Without explanation he would not know the difference between the preliminary practice and the regular game; nor, after the game began would he know the difference between a foul and a fair ball, a hit and an out, between coaches and players and umpires. But the explanation is gladly given and at the end of the game he carries away with him a concept of a baseball game.

This idea begins with sense perception. He sees and hears. His concept of a baseball game is not inborn in his mind. It is not divinely infused into his mind. His mind is not obliged to add the subjective forms of unity, plurality, cause and effect, substance and accident. These elements all exist on the field before him. He sees them, not as abstractions, however, but in the concrete. His sense perception includes all the materials required for the concept. Only there must be some power capable of utilizing these elements. The power capable of exercising this function is the intellect.

From each percept his intellect abstracts the universal elements. The percepts continue to pour into his mind, throughout the two hours, or whatever the time may be, during which the game is played. During all this period his mind is

forming judgments. Some facts he interprets for himself; some are interpreted for him by his companion. About each he forms a judgment.

His first problem is to discriminate between one feature of the game and another, between a foul and a fair ball, between an error and a hit, between an inning and the whole game.

All this time he is contrasting the game before him with other games with which he is familiar, such as tennis, cricket, golf. He observes in what points the present game agrees with other games and in what it differs. This act of comparative abstraction clarifies the mental representation, and eliminates the possibility of confusing one game with another.

At the end of the game, when his friend asks him if he now understands what a baseball game is, his answer is "Yes." His intellect now consciously realizes that by combining all the abstractions derived from percepts or resulting from judgments, he has a concept which can be applied to an indefinite number of exhibitions.

The idea of a baseball game, recognized by him as actually applicable to an unlimited number of exhibitions similar to the one he has witnessed, is called in scholastic psychology a *reflex universal idea.* Even before he had attained to the realization that his idea possessed this universality, he really had a universal idea, but only a *direct universal.* His direct universal became a reflex universal when he became conscious of its universality. His universal idea is his concept. It is a specific concept because his intellect unites in a single representation the elements common

to all games and the features common to every baseball game, but not peculiar to any particular game.

In producing this concept the intellect employed both the analytic and synthetic method. The mind broke up the compound presented to it in its percepts into features peculiar to this game and features common to all baseball games. This was an exercise of analytic activity. It then combined into one concept the common features thus abstracted. This was an exercise of synthetic activity. In producing a specific concept the mind must exercise both sorts of activity.

38. The Objective Basis for Universality in the Intellectual Apprehension.—Specific concepts represent objects which do exist in the extramental world, but not as they exist. Every baseball game is played by particular individuals, at a particular time and place. Every play executed by a player is a particular act. This particularity is totally excluded from the concept. The mind omits it from its consideration in assembling the elements of the concept. It is only the common features which are included in the specific concept. Though each game is particular, yet it is like all other baseball games in essential respects. This likeness actually exists independently of the mind. What the mind does in forming the specific concept is not to produce a likeness between games, but to abstract this likeness from the percepts which represent the game.

The universal does not exist as such outside the mind. There is no universal man or horse or baseball game in the world of things. But all

things have features that are like the features of other things. These features do exist. But as they exist in the individual they are associated with other features peculiar to each. The percept represents these common features not as common, but as peculiar to an individual object. It is only the intellect which is able to represent the common features as common. The intellect accomplishes this by abstracting the common from the peculiar features. Outside the mind the common features are said to exist fundamentally. In the mind they are said to exist formally. They exist fundamentally outside the mind because objects outside the mind offer a foundation from which the common features can be abstracted. The common features, considered precisely as common, exist only in the mind. It is in the mind, where they exist as common, that they exist formally. And it is the concept which represents the common features of things precisely as common. The universal exists formally in the specific or generic concept.

39. The Apprehension of the Unseen.—The object presented to the intellect by the percept or the phantasm may be a word or a thing. The concept which is aroused by the sight or hearing of a word owes its origin somehow to a percept of some thing, even though the concept concern such invisible things as heaven and hell. Our concepts of heaven and hell, which we have never seen, are derived from the phantasms of things we have seen, by abstracting from the phantasms such features as harmonize with what we read or hear about these places. We have seen persons who

were good and happy. From the phantasms which we still retain of such persons, we can abstract the notes "goodness" and "happiness." We have never experienced unending existence; but we have experienced existence in time; and if from these phantasms we abstract the note "existence" and attach to it the negative element expressed by the words "without end," we have some of the elements required for our concept of heaven. We can continue to make abstractions from our phantasms until the concept represents a state of perfect happiness whose existence is perpetual. This is our concept of heaven. Our concept of hell can be derived by a similar process, but by the abstraction of other features.

Naturally our concepts of objects derived immediately from percepts are much more vivid than those concepts which are, we might say, artificially constructed by the mind out of abstractions derived from phantasms which do not represent the objects conceived but things which bear some distant resemblance to them. The concept of the baseball game in the mind of the man who is witnessing one is much more vivid than his concept of heaven or hell. He can, however, construct vivid concepts of heaven and hell by mentally overhauling all his sensuous perceptions, and accumulating in a single concept all the elements of his experience which illustrate in a striking way happiness or pain. The distinctness of the concept will be reflected in the phantasm which is constructed to illustrate the concept. For not only is it a law of our mental life that "when the

brain acts a thought occurs," understanding by "thought" a concept, but it is also a law of our mental life that "when the intellect artificially constructs a concept, a phantasm occurs," which represents by a sensuous image the abstractions united into a concept by the intellect.

40. Concepts from Words.—Our artifically constructed concepts are not confined to such invisible objects as heaven and hell. The words which we read in books and newspapers stand for objects. If the words are to have any significance for us, they must enable us to form concepts of the objects signified. We desire to know the meaning of the words. The meaning is expressed mentally by the concept. When the concept is derived from phantasms which directly represent the object signified by the word, the concept is distinct. When the concept is derived from phantasms which bear only a partial likeness to the objects represented, the concepts are necessarily lacking in distinctness in relation to the object signified.

The same newspaper story of the process of transmuting quicksilver into gold read by a chemist or physicist and by a person who knows little or nothing of either science will evoke different phantasms and different concepts. The phantasms of the chemist and physicist will be vivid and their concepts distinct. The phantasms of the ordinary reader will probably be very vague, and his concept of the process extremely indistinct. Memory, imagination, and the power of abstraction are required to enable the mind to form concepts from words.

Even the newspaper reporter who gets the report and who expresses it in words which he receives from the scientist will probably have only an indistinct concept of the process. Yet the words by which he describes the process are able to evoke a distinct concept in the mind of the scientist who reads his report. They have a definite meaning for the scientist because he has in his mind phantasms which enable him to picture the process vividly, and his concept is correspondingly distinct.

Concepts which are not derived from percepts of the objects themselves often misrepresent their object. One who has never opened a book on scholastic philosophy may have an utterly erroneous concept of it derived from a caricature. It is so with everything. Apprehensions immediately derived from percepts which correctly represent their objects will necessarily be correct. Derived concepts may or may not be correct.

The dictionary in defining words gives their meaning, that is, declares what are the elements that must enter into the concept.

41. The Concept of Self.—The intellect is capable of forming a concept of every object presented to it by percept or phantasm. Each of us has a concept of himself. For our senses are constantly presenting to the intellect percepts and phantasms of our bodily states. From every percept the elements of a concept are abstracted. The total concept of self possessed by each of us is a resultant of all the concepts which we have formed about ourselves, whether these concepts were produced by abstractions from percepts or derived

from other concepts of ourselves previously formed.

42. The Apprehension of the Singular.—The intellect certainly can apprehend objects according to the aspects which they have in common with other things. Every object which is apprehended by a sense in a particular manner is apprehended by the intellect in an abstract manner.

Can the intellect apprehend the individual material object? According to St. Thomas the intellect can know the individual material object only by turning to the phantasm, and even when the intellect does turn to the phantasm its representation (*species*) is not particular, but universal.

Suarez, on the contrary, maintains that the intellect can know the individual material object *per propriam speciem,* by a representation which stands for the individual material object only.[1] He contends that in the proposition, "Peter is a man," there are two ideas in the intellect, one representing the individual material object, "Peter," the other representing the universal aspect under which this particular object is apprehended, "man."

We are constantly speaking of individual material objects, and if our words express our intellectual ideas, then we must have intellectual ideas which represent these objects.

Just how the intellect knows the individual material object, must be a matter of conjecture. It certainly knows that such an object is represented in the phantasm. It certainly abstracts from the phantasm the common aspects which it presents.

[1] See Suarez *De Anima.* Lib. IV. c. 3.

In forming its idea of the individual, does the intellect merely collect these aspects into a sort of bundle? Is this bundle of common aspects the intellectual idea of the individual material object? Each bundle, though containing only common aspects, might contain so many of them that it could be applied only to one object, pretty much as the lines in a crayon are so combined that they represent only one object, though, taken separately, there is no line in it which might not be found in another crayon. Logicians certainly speak of individuating notes as well as of specific and generic. These individuating notes might be, as they exist in the intellect, mere abstractions; but, as individuating notes, they belong to a group, of which the other elements are generic and specific. The individuating notes are added to the generic and specific. The concept must not, however, be conceived as an aggregate of distinct things, artificially united, like bricks in a wall. The concept is one thing. But that one thing has many elements. If it is a concept of an individual, among its elements are individuating notes. A concept containing individuating notes cannot, without abstraction from the individuating notes, be predicated of anything except an individual.

Some such explanation as this is necessary if we are to recognize that the characteristic activity of the intellect in the production of the apprehension is abstractive. The concept of the individual, whether of self or of another, can be formed only by a synthesis of abstractions.

We are constantly dealing with individual material objects. We are intellectually aware of this

fact. We know what we are doing. To have this knowledge there must be in our minds, as intellectual, some representation of the individual material object. But, while the intellect can apprehend the individual, its apprehensions always include some element of universality. It is this power of the intellect to apprehend the universal in the particular, which puts it in the power of the intellect to compare one individual object, or one class of individual objects, with another, to ascertain in what they agree and disagree; in a word, to form judgments about them.

We must guard against the assumption that our concept represents the object in its totality precisely as it exists independently of the mind. The concept represents only aspects of the individual body derived through abstraction. The aspects as represented all have a foundation in the object, but they do not exist as represented. What is united in nature may be represented by distinct concepts.

The difficulty under which the infant labors in its efforts to acquire a knowledge of things does not appear to be due to an inability to abstract, but to get enough abstractions to be able to make some use of them. Experience daily adds to the number; and by the aid of memory and the power of discrimination he gradually comes to the point where he is able, by combining his abstractions, to form distinct concepts.

That the person who has attained the use of reason can form concepts of individual objects is evident to us from our subjective experience and from the observation of objective facts.

Thus, when a lady enters a store to purchase a hat, she looks over the various articles submitted to her inspection.

She studies the style of the hat. The concept of style is at best specific. A countless number of individual hats could be made in the same style. Yet she has an intellectual apprehension of the style of this particular hat.

She considers how it fits her head. The concept derived from this fact is also general. Any one of an unlimited number of hats of the same size and shape would fit her equally well. Yet she has an intellectual apprehension of how this hat becomes her.

She considers the price. Suppose the hat costs one hundred dollars. The concept of one hundred dollars is a general concept. Yet she has an apprehension of this particular one hundred dollars which she must pay for this hat.

What will her husband think of her paying one hundred dollars for a hat? She thinks of this. Perhaps it is necessary for her to be perfectly frank with her husband about the matter. The concept of her husband certainly is particular. Her concepts of what her husband will say, and of what other persons will say, are based upon acts of the imagination. But they are concepts none the less, and they are particular.

Thus when consciousness is submitted to analysis we observe that the intellect apprehends the singular material object. But we observe also that the intellect apprehends its object under some aspect which the object has in common with other individual material things. Even when the lady

apprehends her husband as a particular entity, she apprehends him under a general as well as under a particular aspect. To be a husband is not a condition peculiar to any one man, but common to many. To be the husband of this particular lady is a condition peculiar to one man. The lady apprehends him under both aspects.

And so with regard to the material, the style, the fit, the price, of the hat which she purchases. She conceives each feature as an individual fact; but her intellectual apprehension grasps that fact according to the aspects which it has in common with other things.

Objects existing outside the mind are always particular. The senses apprehend these objects only according to certain aspects. The aspects apprehended by the senses are always particular. By a process of abstraction the intellect apprehends the object according to the aspects which it possesses in common with all others of its class. And it seems that the intellect, by a process of synthesis, combines these abstractions into a single concept which represents an individual object.

43. How the Intellect Employs the Apprehension.—Having formed the apprehension, the intellect puts it to some use. It can be employed for purely speculative, or for practical purposes.

During the World War the citizens of this country studied the reports of the War which appeared in the newspapers. The only practical use to which they could put their knowledge, merely as citizens, would be in the coming Presidential election. Apart from this their views were purely speculative.

Mr. Wilson, as President of the United States, studied the reports which came to him through official channels. He studied them with a practical purpose in view. First, he wished to maintain the dignity of the nation; secondly, as far as possible to prevent this country becoming involved in the War; thirdly, if the interests of the nation demanded it, to be prepared to state his reasons to Congress in asking for a declaration of war.

In the language of St. Thomas, citizens and President were ordering their apprehensions "to the knowledge of something else, or to some operation, and this is called intention."

In pursuit of the object in view, knowledge or operation, they sought information. They read reports, reflected upon them, discussed them, listened to public addresses about them. This was the exercise of "invention."

The study of the facts led the citizens to form the judgment that we should, or should not, enter the War. The study of the facts finally induced the President to assent to the conclusion that he should ask Congress to declare that a state of war existed. He judged that the United States should enter the War. The verdict of the President was an act of "phronesis, or wisdom; for it belongs to the wise man to judge."

Mr. Wilson having formed the judgment that he should ask Congress to declare that a state of war existed, the next step for him was to formulate in his own mind the statement of the reasons which would justify such a demand; "This is the ordering of interior speech."

Finally he appeared before Congress and delivered the address in which he asked Congress to declare that a state of war existed. This was "external speech."

It is by means of the judgment, therefore, that the intellect makes use of its apprehensions for speculative or practical ends.

A judgment is a mental act by which the mind pronounces one object of thought to be identical with or different from some other object of thought.

Judgments are expressed by propositions. A proposition is an affirmation or denial, by words or signs, of one thing about something else.

Judgments are classed as immediate or mediate. An immediate judgment is one in which the evidence for the agreement or disagreement of the objects compared is immediately apprehended. Whether the power of the mind to appraise the

evidence results from previous judgments or not, at any rate no process of inference is required at the moment the immediate judgment is formed. When you look out of your window during the day, you can say "I see." This is an immediate judgment. Because you are able to see clearly, you can also say "The sun in shining," even if you are not looking at the sun. In this case "The sun is shining" is a mediate judgment.

If you are asked how you know that you see, you can only answer that your consciousness bears testimony to the fact. If you are asked why you say "The sun is shining," though you do not see it, you reply, "Because I can see clearly." The "because" always indicates an inference. From one fact you infer another. The inferred judgment is a mediate judgment.

The immediate judgment can be analytic or synthetic. It is analytic when it results from a process of analysis, when a whole is mentally separated into its constituent parts. Thus, by analyzing the idea expressed by the word "whole," we find "greater than any of its parts" to be involved in it. We cannot insert a "because" after the proposition: "The whole is greater than any of its parts." This judgment does not result from any accidental relation between the whole and its parts. The relation between the whole and its parts is an essential one. It may require some study to ascertain what is meant by "relation" and by "essential." But when we do apprehend the meaning of the words, without any argumentation we realize the truth of the proposi-

tion that "the whole is greater than any of its parts."

When you say "I see," you express an immediate synthetic judgment. It is immediate because no process of reasoning is involved in it. It is synthetic because you do not discover the fact of sight by analyzing your essential constituents, but by experience. Sometimes you see; sometimes you do not see. Only experience can enable you to know that you see.

A mediate judgment is one which is obtained through a process of inference. Inference proceeds in one of two ways; either from the universal to the particular, or from the particular to the universal. The first is called *a priori* reasoning, the second *a posteriori.*

In forming its judgment the mind compares the objects as represented by its ideas. If it perceives that the objects, as represented, agree with each other, the mind asserts their agreement. If the mind perceives that they disagree, it asserts that they disagree. If the mind perceives the probability of their agreement or disagreement it asserts this probability. If the mind is unable to make any assertion, it is in a state of ignorance or doubt.

Mental assertion is by some called assent, by others belief. "I believe the United States was justified in taking part in the World War" means "I assent to the judgment that the United States," etc. The oral or written proposition by which the judgment is expressed, if it is the true expression of the judgment, is the mirror which reflects the mental assertion.

Cardinal Newman declares: "Assent is unconditional; else it is not really represented by assertion. Inference is conditional because a conclusion at least implies the assumption of premises."[1]

For a complete discussion of the various states of mind in relation to assent, and the relation of assent to certitude, the reader is referred to books on Epistemology, where these subjects are discussed professedly.

[1] *Grammar of Assent*, p. 8.

44. What Is Meant by Reasoning.—When we reason, we are seeking the "why" of things. The act of reasoning is natural to man. It begins in early childhood and ends only when the eyes are sealed in death.

Anyone who has happened to be in the vicinity of a child who was traveling in the company of an older person, whether on a railroad train or a boat, could not have failed to observe the external manifestations of the reasoning process that was going on in the child's mind. He makes no secret of his pursuit of knowledge, or of his determination to penetrate to the causes of all things. Every phenomenon sets his powers in motion. He can begin with anything, even with the fly on the bald head of the man in front of him. He will cease his inquiries only when he has mastered the philosophy of that fact. The protests of his companion may be painful for him to endure, but they cannot interrupt his pursuit of truth.

As he grows and his knowledge increases, he is not so frank and fearless in his search for truth. He may lose some of his eagerness for it. But he will never lose all interest in it. To his dying day he will continue his inquiries into the causes of things.

Auguste Comte was of opinion that the mind should content itself with a knowledge of facts[1]

[1] It is evident that the philosophy of Comte has been a directive principle in "Natural Science" psychology.

and of the relations between them, that it is fruitless to inquire into the causes of things. One might as reasonably advise the wind not to blow. Our interest in the world in which we live will not be satisfied with a knowledge of facts and of the relations between them. We want to know not only the "what" but the "why." The fact that the question is unanswerable is no guarantee that it will not be asked. The young husband who has been stricken with a fatal disease when fortune was beginning to smile upon him, asks the unanswerable question: "Why am I picked out to endure this suffering? Why should I die while I am still needed?"

Facts are often easy enough of apprehension. But the mere apprehension of facts does not satisfy the passion for knowledge. Rooted in the nature of the mind is an unquenchable desire to penetrate to the causes of things. And it is only when we have penetrated to the causes, that we feel that we understand the facts. We can apprehend, we cannot understand, the facts, without a knowledge of their causes.

When the question is asked: Why is this so? the answer, if the answer is real, declares that the fact is so because—. It is the mind's pursuit of the causes of things that is called reasoning.

The causes are material, formal, efficient, final, exemplary and instrumental.

In reasoning we attempt to connect a fact with its cause, or to discover the effect which will follow from the operation of a cause. Rain is a

common event. Is it likely to rain tomorrow? What are the causes of rain?

In answering the first of these two questions the mind proceeds from the universal to the particular. It applies a universal law to a particular case. This sort of reasoning is called *a priori.*

In answering the second question the mind proceeds in the opposite direction. It begins with particular facts, which it compares and analyzes, and goes on to establish a universal law. This is called *a posteriori* reasoning.

There are three factors involved in the reasoning process: facts, principles, inferences.

A. Methods of Reasoning.—The formation of the universal truth from the observation of particular instances is the application of the inductive method. When the universal so established is used as the major of a syllogism, the conclusion is obtained by the deductive method.

Both induction and deduction are necessary for scientific progress. The universals are discovered by induction, and applied to particular instances by deduction.

The method of reasoning may also be analytic or synthetic: analytic, when a whole is broken up into its parts; synthetic when separate facts are combined into a whole. The chemist employs both methods. The analytic method is appropriate when a complex problem is presented to the mind. The synthetic method is necessary when the mind is required to unite the results obtained by the examination of the several parts of the problem.

B. Reason and Inference.—Reason proceeds by way of inference. Step by step facts are carried

towards their cause. Like the Indian in the story who, seeing a strange footstep on the sands near his dwelling, pursues the stranger by the traces which he has left on the sands, and continues his search until he connects the footprints with the person who made them, so the mind, finding the footprints of a cause in the facts of life, attempts to trace them to the originating thing. The entire process and all the steps in it are the work of reason. The separate steps are called "inferences."

Inference is an act of the mind. But, like every act of the mind, it is possible to give it outward expression. When expressed, it is given a formal or an informal shape. Inference, formally expressed, is found in the syllogism.

C. Formal Inference.—A syllogism is made up of three propositions so connected that, if the first two be admitted, the third must likewise be admitted.

For the validity of the syllogism certain assumptions are necessary. It is assumed that two things equal to the same thing are equal to each other; that when two things are compared with a common third and one is found to be equal to the common third while the other is not, they are not equal to each other. It is the business of formal logic to determine the rules of the syllogism, and the reader who is desirous of further information upon this matter is referred to books on this subject.

As the syllogism is merely the outward expression of the reasoning process, mental activity must precede oral expression. If the conclusion

of the syllogism expresses a truth which is correctly deduced from the premises, the mind must have gone through the process which is indicated by the syllogism.

In the reasoning process, when the syllogism is its expression, there are two judgments before the mind. Each judgment contains two apprehensions. After comparison the mind affirms their agreement or disagreement. One apprehension must be common to both judgments. The other two apprehensions are compared with the one which is common. If they are found to agree with it, they are affirmed by the mind to agree with each other. If one is found to agree with the common third, and the other is found not to agree with it, the mind asserts that they do not agree with each other.

In reasoning we can concentrate our attention upon the correctness of the process as well as upon the truth of our judgments. Correctness in the reasoning process is as necessary in the reasoner as correctness in measurement is to the surveyor. An accurate survey will not guarantee the fertility of the soil, or bring it any nearer the market. It will, however, guarantee the boundaries to the owner. Correct inference is no guarantee of the truth of the judgment inferred. It does, however, guarantee that the inferred judgment is within the boundaries marked off for it by the judgments from which it is derived.

The observance of the rules for the syllogism ensures the correctness of the formal inference.

D. Informal Inference.—Reasoning without the guidance of the syllogism is informal reasoning.

It is the method employed by all persons who are not familiar with the syllogism, and even by those who are familiar with it when not engaged in some study which requires its use.

In our ordinary conversations we express our reasoning processes in an informal way. When a lady asks her husband who comes in late for dinner why he is late, he simply states a fact: "The power was shut off on the railroad and I had to trolley home." The lady is satisfied; she has the reason for the lateness. Apparently there is no universal proposition involved in this reasoning. The universal is there, however, but it is not expressed, because it is so evident. If the universal were to be expressed it might take the following form: "Whoever has to travel in a conveyance should take one which will carry him." The form of argument in which one of the premises is omitted is called the enthymeme. Most of our reasonings are expressed in the form of the enthymeme, as the mind abhors the expression of the universal truths or particular facts which are perfectly patent. It would be wise, however, to subject to examination some of the principles and facts which we assume to be evident in our enthymemic reasonings. It is because of the error in our assumed principles or facts that we arrive at false conclusions in our discussions.

Some minds have a horror of formal inference. Yet the informal inference can be given the appearance of a formal inference by explicitly stating the premises from which it is derived. Cardinal Newman's informal inference:

"The Catholic Church is the Church of which I should be a member"

can be given the place of conclusion in a formal syllogism. Thus:

Whatever church was established by Jesus Christ is the church of which I should be a member.

But: The Catholic Church is the Church which was established by Jesus Christ.

Therefore: The Catholic Church is the Church of which I should be a member.

Though not everyone would admit the major premise, Newman admitted it.

It was the investigation into the truth of the minor which engaged his attention for many years.

In considering the truth of this proposition, he was obliged to determine whether Jesus Christ established one church or more than one, whether that church still existed, and how it could be identified; whether its divine origin was clearly recognized for any period of time, when and where and by whom; he was obliged to compare the existing churches of Christendom with the early Christian Church, to ascertain which of them bore the identifying marks which he knew from his study of the early Church to belong to the Church of Christ.

As a matter of fact, however, Cardinal Newman did not employ syllogistic reasoning at all in arriving at his conclusion. He was supremely skeptical about the value of syllogistic reasoning in concrete cases. Yet his reasoning process can

be expressed in the form of the syllogism. Every deductive argument can be expressed in the syllogistic form. And it is a wise policy, if the matter is important, to put it into that form before finally assenting, or refusing assent, to the truth of the conclusion. When a proposition is given the place of conclusion in a syllogism, the reasoner has an opportunity to view it in its context, to see what are the principles and facts whose truth he must ascertain if he is to assent to it, or to deny it, with a proper understanding of its significance.

The ordinary mind is able to see only the inference which is closely connected with facts and principles. The genius can carry his inferences onward indefinitely. It is a difficult task for the plodding mathematician to fill in the steps which the mathematical genius will take at a leap. This capacity for carrying a principle onward to its ultimate conclusion is sometimes spoken of as an instinct. "This boy has an instinct for mathematics" merely means that his reasoning capacity in relation to mathematics is extraordinary.

E. Testing Inferences.—In the physical sciences it is generally possible, and often easy, to test an inference. Intuition can confirm or invalidate an inference.

Langley's inference that he could fly in his airplane was invalidated by experience. The inference of the Wright brothers that they could fly in their machine was confirmed by experience.

Admiral Von Tirpitz inferred that he could defeat the Allies and Associated Powers by the use

of the submarine. His inference was invalidated by experience.

A political or social theory cannot so easily be tested. Russia is at present testing out the inference that society can prosper when organized according to the Marxian principle; and the United States is testing out the inference that alcoholic beverage can be completely eliminated from the country. Only experience, continuing through a long period, can determine whether such inferences are correct.

When the inference is deductive and concerns the invisible and intangible, evidently it cannot be tested in the same way as an inference concerning the visible and tangible. In testing the correctness of an inference concerning the invisible, it is necessary, first, to test the correctness of the statement of facts. This may require deep research and careful analysis. But it is often possible. Besides facts, principles are required for deductive inference. A principle is universal. A true principle admits of no exceptions within the range of objects to which it can properly be applied. Such a principle is tested by facts. Can a single fact be cited which does not harmonize with the principle as stated? If so, the statement of the principle must be amended so as to admit of no exception.

Besides ascertaining with certainty principles and facts, and stating them accurately, it is necessary to draw the correct inference from the facts as viewed in the light of the principles. If the argument is cast in strict syllogistic form, the application of the laws of logic will enable the

reasoner to test the correctness of his deductive inference.

Not all inferences are true, or the countless disputes which we find in current literature could not arise. It is not the proper use of reason which leads to untrue inference, but its improper use. As we shall see later, every assent which is not necessitated by evidence, immediate or mediate, is a free assent. It is in the free assent that error is often found. Error can be avoided by withholding assent until the evidence justifies assent. If a person does yield assent to a judgment which is later discovered to be false, he cannot indict reason as unreliable. But he can legitimately bring an indictment against his own will for requiring, or permitting, an assent to a judgment which was not justified by the evidence.

The discussion of one's inferences with a person who can comprehend them is a valuable aid to the reasoner. Left to himself he may lapse into all sorts of errors about facts and principles, and his inferences may be too broad even for the facts and principles when he has ascertained them accurately. He needs the criticism of persons who will stand to him in the light of unimpassioned reason and reflect its verdict. The reasoner may be right; but, if so, he should be able to convince his critics that he is right. When the judges have a knowledge of the facts and understand the principles by which they should be judged, their opinions should have great weight. No man is a good judge in his own case. If he finds that his critics do not agree with him, he would be wise in reviewing his whole reasoning process with great care.

A fair and competent critic is the reasoner's best ally.

F. Reasoning and Science.—Sir Isaac Newton observed, what every child can observe, that apples loosened from their branches, fall to the ground. In the olden days when the child asked why the apple fell to the ground he was told that it was seeking its natural place. This explanation may have satisfied the child, but it did not satisfy Isaac Newton. He demanded a more satisfactory explanation. He put his mind to the task of finding that explanation; and, after many experiments and observations, he formulated the Law of Universal Gravitation. This explanation shows the universality of the phenomenon and its regularity. It tells us what is done, and how it is done. But does it inform us of the why? Was Sir Isaac any closer to the "why" of things than the child who accepted the explanation that the apple was seeking its natural place?

Scientific knowledge can acquaint us only with facts and what we call their proximate causes. These so-called proximate causes are sometimes nothing more than the generalizations of phenomena. These generalizations are important if reason is to penetrate to the "why" of things. But they do not furnish an answer to the "why." To assert that bodies attract bodies because it is the law of their nature to do so, prompts the question: What is meant by a law of nature? If the "law of nature" merely signifies a regularly recurring phenomenon of nature, the answer comes to this: This body attracts that body because every body attracts every other body. The

answer merely puts the present fact in line with all other facts. It does not explain any fact. The apprehension of the universality of the phenomenon enables us to see the relation of the present phenomenon to all others of its class. This is a great deal. But the question still remains to be answered: Why should any particle of matter attract any other particle of matter? When scientists have ascertained the cause of the phenomenon they have a genuinely scientific knowledge of it.

G. Reasoning and Philosophy.—Philosophy, making a synthesis of the truths of all the particular natural sciences, and making special use of the science of natural theology, can return some answer to the "why." Even then the answer can be given only in general terms. There is no science of singulars, and consequently no philosophy whose adequate object is the individual fact. There are problems to which philosophy can give no answer, because no natural science has ascertained the facts involved in the problems. Philosophy cannot account for human misery, because no natural science can declare how it originated. Philosophy can trace some, not all, of the phenomena of life to the ultimate causes to which they owe their origin.

H. Reasoning and Scientific Progress.—We make progress by using reason as our guide. Positivism, which is satisfied to establish the relations between facts, if strictly adhered to, cannot promote progress. The cross-word craze apears to be a manifestation of the positivistic tendency. The practice of solving cross-word puzzles does

not contribute much to the progress of the world. The scientific progress which the world has made during the past four centuries has not been due merely to the establishment of facts and their relations to one another, unless these relations be understood to include the relationship of effect to cause. It is by tracing effects to their causes, and causes to their effects, that science has made progress. When science discovered that the cause of the fever which ravaged the Panama Canal Zone was the germ carried by the mosquito, it was not long before the mosquito was banished and the extraordinary perils to life in the Zone were ended. While scientific investigation has sometimes succeeded merely in discovering the relationships between facts, such as is expressed in the Law of Gravitation, it has not always been defeated. And it is due to the success of science in tracing effects to their causes that the earth today is a much more delightful place on which to spend a lifetime than it was a few centuries ago.

I. Reasoning and Individual Progress.—In the world of business it is the men who ascertain with certainty the particular facts, and the universal principles under which they fall, who win success. The Rockefellers, Fords, and Harrimans of the business world think clearly about both facts and principles; their reasoning processes are prompt and accurate, and their judgments are stable.

The man who succeeds in winning distinguished political honors may owe his success in a measure to circumstances over which he has no control. But he cannot enjoy permanent success unless he has a firm grasp of principles, and a marked ca-

pacity for co-ordinating his facts with his principles.

In social life reasoning power manifests itself very largely by tact, which is the power to perceive and to execute acts which appear to others to be perfectly appropriate to the character of the persons involved and to the circumstances in which they are placed. This capacity can result only from experience and training.

J. Reasoning and Education.—Professor Titchener, in his *Primer of Psychology*[1] declares:

> "Man has dubbed himself homo sapiens, and defined himself as *rational animal;* but he rarely thinks."

He is born into a society where he finds judgments ready-made about social organization, religion, morals. We get the benefit of the thinking of others by using their inventions. Libraries are filled with books which inform us of the results of the thinking of other men. Each individual contributes his mite to the sum of human wisdom. Outside the range of his profession or daily occupations the mature man does but little thinking. He is largely a product of environment and heritage.

This sounds very much like an echo of the words of Jeremiah:

> "With desolation is all the land made desolate because there is no one who considereth in his heart."[2]

The evidence of the influence of environment is

[1] p. 217.
[2] XII, 11.

perfectly clear to one who considers the characters, manners and mentality of the immigrants who come to these shores and of their descendants. The immigrants all have "foreign" ways. Their descendants have "American" ways. If those descendants had been born and brought up in the lands of their ancestors, they would have been indistinguishable from the other immigrants of the same race who come here. Having been brought up in an American environment, their manners are indistinguishable from the manners of others whose ancestors have been here for several generations. Their mentality will depend very largely, though not entirely, upon their education.

The force of environment modifies existing powers. It does not produce them. It merely gives new occasions for their exercise. By taking advantage of the superior opportunities offered by his American environment, the descendant of the immigrant will surpass his parents and ancestors in some respects, though he may be inferior to them in other respects. He may speak English without a foreign accent, though he may not have so keen a sense of the inviolability of property rights or of the sanctity of human life.

Home as well as school is an influence in education; and it cannot be denied that the educational advantages of a home in which the parents can trace their ancestry through an unbroken line of educated forebears are greater than those of the home in which the ancestors never got beyond the elements. It is upon the ideas and inspiration which the child receives in the home, that school

and college must build. In the home of the educated, when the parents are not absorbed in business or pleasure, the child receives in an informal way a vast amount of information and the inspiration to excel. The uneducated parents too often throw the entire burden of educating their children upon the school. Even the inspiration which they could contribute they often fail to furnish. The possession of a certificate or of a degree represents their ideal. The school can accomplish much if it has the proper material upon which to work. But there is an inspiration which can come only from the home. And, unless the parents are able and willing to impart this inspiration, the indictment which Professor Titchener draws against mankind generally, is very likely to be found true in the particular case.[1]

Education always results in the production of intelligence. The students apperceive some truths previously unknown. Education ought also to result in the development of the reasoning power, and it will so result if the students are required to

[1] "At present our great private schools are, as I have said, locked and bound into the same system that controls our universities. The same clientele supports the universities and the schools that feed them. Our well-to-do, ingenuous, socially ambitious and intellectually vacant industrial classes dominate in both fields.

"The boys—as a rule—do not know as much of history or literature as a village boy of like age knew in the America of fifty years ago. Their outlook upon life is that of their parents. They wish to keep in the swim of the epoch. Social success in the larger meaning of the term is their aim, an aim in which learning for its own sake counts for zero." (*Atlantic Monthly*, December, 1924. John J. Chapman, in "Our Great Private Schools.")

go through the mental process required for reasoning—facts, principles, inferences. When the students are not required to go through this process, the development of their reasoning powers will necessarily depend upon the haphazard results of social intercourse, and the observation of nature and of their occupations. Every normal person has some measure of reasoning power. To increase that power it is necessary that the mind should become formally acquainted with general principles. The more of such principles the mind grasps, assuming that they are true, the larger the number that can be applied to facts. The power to ascertain facts accurately, to perform the mental process of viewing the facts in the light of the principles, and to draw the proper inferences from the facts so viewed, can be augmented. It is the business of education, among other things, to develop this power.

It is generally asserted that the child attains the use of reason at the age of seven. But the capacity for reasoning in the child of seven is very limited. Even in the young man of twenty the power to reason is not nearly so great as he imagines. He can easily apply a rule to a problem when the problem is all set up for him. The rule is the application of a principle to a particular case. His difficulty comes when he must set up the problem for himself, and select the principles which apply to it. Principles are more abstract than rules. It is an easier task for a boy to criticize a syllogism according to the rules of the syllogism than to apply the principles which underlie all reasoning to a proposition. To apply

a principle correctly it is necessary to realize its content and its range. Only the mind which has been trained in the process of abstract reasoning can grasp firmly the significance of a principle. It is the business of science, among other things, to formulate principles; and among the chief objects of the teaching of science is to make the student acquainted with principles and to train him in the application of them. Public discussion of large problems is one of the most effective methods of compelling the student to focus his attention upon the exact significance of the principle, and its application to the particular case.

Besides mastering principles, the student must know how to ascertain his facts. Every science has its own methods of ascertaining facts. Reasoning, to be genuine, must be based upon ascertained facts, no less than upon true principles; otherwise the fact will not be connected with its true cause.

It is necessary to distinguish between actual reasoning and the apperception of the results of another's reasoning. *When we reason, we actually establish the connection between a fact and its cause, or a cause and its effect.* An example will illustrate the difference:

In locating the planet Neptune, which no eye had ever seen, Le Verrier had facts and principles to guide him. The facts were the observed deviations of the planet Uranus from its calculated orbit. The principles were the laws of gravitation and of mathematics. In arriving at his conclusion he observed the processes required for correct mathematical inference.

When he had completed his labors, he requested Dr. Galle at Berlin to point his telescope to a certain spot in the heavens. Dr. Galle looked and saw the planet whose attraction was responsible for the deviations of Uranus. Vision verified inference. Le Verrier had connected the fact with its cause.

The student can examine Le Verrier's process, and, understanding the process, can explain it to others. The student himself, however, is not reasoning. He is merely assimilating and dispensing the results of another's reasoning.

The advantage of such study is that it familiarizes the student with the factors involved in the act of reasoning, so that when he himself is required to connect facts with their causes he will understand how to proceed.

Most of us are not required to do scientific reasoning. We are, however, constantly reasoning in an unscientific manner about matters that are familiar and simple. It is the correct reasoning of the ordinary man and woman about the ordinary affairs of life which preserves order and maintains movement in the domestic, social, industrial and political life of mankind.

45. Day-Dreaming.—When forced into solitude from lack of external occupation, or when the external occupation is not such as to require serious attention, the mind is free to think of anything it chooses. Memory and imagination supply the phantasms which the intellect interprets. It is a mental "movie" with the mind as operator, selecting its own films, or picking them up at random. It is a day-dream.

Sometimes a comedy appears on the screen. Sometimes a tragedy, according to the character of the recurring phantasms.

The comedy is entertaining and restful. It relieves the nervous system of the strain which reasoning has induced. Probably one of the reasons why the moving picture theater is so much frequented is to secure such relief. There the mind is not even required to select its own films. It follows passively the course marked out for it by the phantasms objectified on the screen.

Day-dreams can have a tragic character, as when memory presents a picture of a painful past, of blunders committed, of calamities endured.

The day-dream is not necessarily unproductive. It can look into the future as well as into the past. But its products are not always desirable. "A vacant mind is the devil's workshop." All sorts of folly may be suggested in the day-dream.

However, the fruits of day-dreaming are not always evil. Both St. Augustine and St. Ignatius of Loyola were day-dreaming when thoughts occurred to their minds leading to a new outlook upon life, transforming their characters, and launching them upon careers which shaped the course of events for the centuries that followed.

The fruits of the day-dream will depend naturally upon the character of the phantasms upon which the mind willingly dwells, upon the actions which they suggest, and upon the choice made by the will out of the various courses of action suggested.

The day-dream itself is not an exercise of the reasoning power. But it may suggest a course of

action whose execution demands the exercise of the reasoning power.

46. The Conversation.—Social conversation is the oral interchange of ideas in an informal manner among several persons. The subject may be anything. The character of the conversation may be light or serious, entertaining or dull.

Social conversation, on the surface at any rate, aims at entertainment. A social conversation, to be successful, must be kept going, and kept interesting. A Mrs. Nickleby is hardly entitled to be considered a good conversationalist, for, though her stream of talk is incessant, it is rarely interesting. To be a good talker is not the same as to be a good conversationalist. The good talker may be a monologue artist who must have the attention of his audience all the time. The conversationalist gives all the members of the party an opportunity to express their views.

The social conversation appeals to the same mental powers as the day-dream. It stirs the memory, stimulates the imagination and arouses emotion. It is for the mind what sports are for the body, affording opportunity for the healthful exercise of the mental faculties.

In social conversation memory especially is set free. It pours out its treasures with little restraint. Social conversation demands ready-made ideas. If the members admit different principles, are unequally acquainted with facts, and derive their inferences in different ways, an interesting discussion may arise. By such discussions it is possible to learn much. Each supplements his knowledge of facts, each reviews his principles

and arrives at a better understanding of them, each reviews his reasoning process to correct whatever errors he may have committed in drawing his inferences.

In social conversation the only researches that can be made are into the recesses of the memory. The testing of principles and inferences depends upon the mental response of the members of the party to the principles and inferences enunciated.

Social conversation is not likely to be directly productive of an advance in scientific knowledge, though it may suggest an inquiry which, when pursued scientifically in the library or laboratory, may result in the advancement of science.

Conversation is not, however, restricted to the social interchange of ideas. It is the medium through which business is often transacted. When statesmen of different countries meet to discuss affairs that concern their governments, the interchange of ideas is sometimes called a conversation; sometimes it is called a conference, as implying greater formality. Even in the conference, although there may be much discussion, there is not likely to be much reasoning. The reasoning process is performed before the conference. The conferee who goes into the conference unprepared is likely to come out defeated. John Maynard Keynes in his *Economic Consequences of the Peace* gives some interesting illustrations in point.

To reason requires an investigation into facts, an examination of them in the light of general principles and the deriving of correct inferences from the comparison of facts and principles. Conversation offers an opportunity to express the

results of reasoning, and enables the members of the party to compare results and processes. It does not afford leisure for the investigation necessary to connect facts with their causes. That work must be done in advance.

Conversation is often not more serious than the day-dream. Words are uttered without much consideration as to facts, principles or correct inferences. Hence the regrets that sometimes follow when the speaker realizes that he has "made a show of himself." The movement of the vocal organs, like the movement of the limbs, is under the control of the will. But the will often permits itself, in directing the powers subject to it, to be guided by impulse rather than by deliberate judgment. Self-mastery in speech, no less than in bodily movement, is acquired by concentration of the intellect upon the propriety of the act, and control by the will in its performance.

47. **Apperception.**—We apperceive by incorporating new ideas into the existing body of ideas. The new idea is not assimilated until some link is discovered which will connect the new with the old.

To illustrate this truth, let us consider the word "Bolsheviki."

When the world heard that a small group of men calling themselves "Bolsheviki" had captured the government of Russia, it wondered what the word "Bolsheviki" meant. It was soon learned that "Bolsheviki" meant the major group. Yet the "Bolsheviki" were evidently not the major group in Russia, but merely an aggressive and well organized minority. In what sense, then, were they entitled to that name? And what did the

name imply? It was then learned that at a meeting held at Stockholm about a dozen years previously, the Socialists, who had assembled there, were split into two groups over the policy which the Socialist party as a body should officially endorse. The majority voted with Lenin for revolutionary socialism, against a minority who stood out for evolutionary socialism. Thus the word "Bolsheviki," which signifies the major group, becomes intelligible. It signifies the group of revolutionary socialists who constituted the majority at a particular conference, and their followers. We now not only understand the literal meaning of the word "Bolsheviki," but we are able to connect it with the principles for which the name stands.

If we already possess a concept of the significance of Socialism, we can add the new to the old concept, so that the two will fuse into a compound. The concept of the general principle of Socialism, the denial of the right of private property in the means of production, the determination to secure control of the governments of the world, either by evolution or by revolution, is the old concept. The new is the concept of the meaning of a designation which was won at a particular conference, and is now applied to a group which has successfully engineered a revolution in Russia. The combined concept will be expressed by the phrase, "Revolutionary Socialism ruling Russia." Thus we not only perceive the meaning of "Bolsheviki," we apperceive it.

Education is impossible without apperception. Many a child who succeeds splendidly in one sub-

ject, fails miserably in another. What is the reason? Evidently the failure is not due to a lack of mental power. The child must have mental power to succeed in any subject. Failure in one subject, which is contemporaneous with success in another, indicates lack of apperception. The child does not assimilate the new ideas. No link connects the new with the old, and the new remain isolated. The cause may be a bad system of education, inefficient teaching, lack of preparation or application on the part of the child.

The cause can be ascertained only by investigation. Whatever the particular cause may be, the failure of the child is evidence that its mind does not assimilate the new ideas that are proposed to it. If it is to make progress, the necessary action must be taken to remove the impediments and to make it possible for the child to link up the new ideas with the old.

Sometimes children attempt to escape the task of mental assimilation by committing to memory the words or answers which will carry them through their examinations. Memory work is difficult for the older people. The study necessary to discover the link which will unite the new ideas with the old is difficult for children. But memory work is no substitute for apperception. When the memory loses its hold upon the words, nothing remains, if the mind never had the ideas which go with the words. If the mind assimilates its ideas, it is independent of words. It can construct its own expression.

The mind is a workshop. It accomplishes results, not by permitting its ideas to be heaped to-

gether like scraps on a junk-pile, but by assembling its materials into a co-ordinated whole. Intellectual progress demands the incorporation of the new idea into the existing body of ideas.

When a new interpretation of a fact, or of an object, is presented to the mind, it causes a rational satisfaction if it makes the fact or object better understood. But if the new interpretation conflicts with an existing interpretation which satisfies the mind, it is likely to receive the same sort of welcome which a Socialist platform would receive at a Republican convention.

The new interpretation is welcome if it can be assimilated, if there is an apperception of its truth. It is resisted if found not to harmonize with admitted principles. Admitted principles are assumed by the mind to be true. Whatever conflicts with truth cannot be true, and the new interpretation, according to the supposition, conflicts with the truth. In the circumstances resistance to it is inevitable.

Let the reader apply this principle to our interpretation of mind. Wherever our interpretation conflicts with principles which the reader admits, our interpretation is resisted. Where it harmonizes with admitted principles, it is accepted, assimilated, apperceived.

Apperception of a proposition is no guarantee of its objective truth. A deluded person will interpret every fact in the light of his delusion. His interpretations may harmonize. When the spell is broken, and the objective truth sheds its clear light upon the facts, he discovers that, while his inferences were excellent, the assumption,

which was the cause of his delusion, was without justification. In practical life, no less than in practical jokes, we have seen this truth illustrated.

If we are in error, and attempt to assimilate genuine truth with our error, we realize that we must reject one or the other, our old error or the new truth. We may hold simultaneously to several propositions which would conflict if brought together. We keep the peace in our minds by keeping such propositions apart. A person may even admit, as a first principle, that it is impossible to harmonize all our assents, even though each assent is an assent to the truth. With such a principle it is possible to admit into the mind conflicting propositions. The mind in such cases refuses to consider the conflict, and concentrates upon what it regards as the truth in the separate propositions. Such is the attitude of very many persons towards their religious tenets.

Newman, while still an Anglican, wrote:[1]

> "Of course it may be said that one ought not to attempt to be consistent, which is systematizing—but to do each duty by itself as it comes, without putting things together, or saying that two and two make four. Well, I will not debate this, but—" etc.

The new idea must harmonize with the old if it is to be apperceived. Yet it is not the harmony of thought with thought which constitutes truth as it exists in the mind, but the harmony of thought with its object.

[1] *Life*, Ward, vol. I, pp. 80, 81.

48. By will we understand the supra-sensuous appetitive power of the soul. As there is a sensuous appetite which is aroused by the good as sensuously apprehended, so there is a rational appetite which is aroused by the good as rationally apprehended. The apprehensive power seizes upon an object as true. The appetitive power tends towards the object so apprehended as good. It is the appetitive power of the rational order which is called the will. The will is the chief executive among the faculties of the mind, commanding the powers of the soul subject to its jurisdiction, by approval or veto, to exert themselves to secure the good it seeks.

In our definition of mind we recognized unity of consciousness, and therefore unity of mind. All the powers by which I become conscious are powers of one mind. Though these powers are not all in the same subject, they all issue from the same principle.

The analysis of our mental states bears out this inference. When I become sensuously aware of a fact, I also become intellectually aware of it. When I experience a sensuous attraction towards an object, I become intellectually aware of that attraction and impelled to employ the powers of the rational order for its attainment.

Objects of sense can make an impression upon the mind through percept or phantasm. Some

objects so presented have an attraction for the mind; others repel it. The prospect of a pleasant ride in an automobile is an attraction. The prospect of falling off a steep precipice repels. Repulsion is merely the negative side of attraction. While life attracts, death, which brings life to an end, repels.

The attraction consciously experienced by the mind when an object is presented to it in a mental representation, is called desire.

Desire may result from a percept, as when a hungry man sees a supply of food, or when a bandit sees jewelry exhibited in a window; or it may result from a phantasm, as when a prisoner pictures himself in his old haunts.

An impulse, which results from the reflex activity of the nervous system, manifests itself in consciousness. It may arouse a phantasm which represents an object as attractive or repulsive. Thereupon the mind experiences a desire to secure the attractive object or to avoid the threatened pain. Sensual emotions may originate in this way.

Because of the unity of consciousness, when the mind experiences a sensuous attraction or repulsion for an object, there is a corresponding attraction or repulsion in rational consciousness. By this we do not mean that reason approves of all the actions to which there is a sensuous inclination. But reason is made aware of the sensuous inclination. The sensuous inclination puts its case, as it were, before the court of reason, and reason admits that if sense alone were to be taken into consideration, if sensuous pleasure were the

only object worthy of pursuit, the claims of sensuous inclination would have to be admitted.

Because of the unity of consciousness, when the intellect pronounces an immaterial object worthy of effort, the imagination co-operates by producing a phantasm which will bear some analogy to the concept. The intellect pronounces a knowledge of Greek worthy of effort; the imagination pictures the student reading a Greek classic. The phantasm reacts upon reason in the form of attraction.

In the mature normal person, action does not follow immediately upon desire.

We are all aware that we experience many inclinations to which we do not yield. The inclination may recur again and again. But it does not necessarily result in action. We know that we can resist our inclinations so long as we are in a normal state.

A person in an abnormal state may not possess this power. One who is located in the tenth story of a burning building which offers no means of escape except by leaping through the window to the ground, may be unable to resist the inclination to take the leap, even though death be very likely to follow. Such action would appear to be reflex. The person knows what he is doing, but cannot control his muscles. Another person, possessing complete self-control, might also leap out of the window, preferring possible safety to certain death by fire.

The motive which impels the will to choose an object is the goodness of the object as presented to it by the intellect. The spontaneous reaction

of the will to the object so presented, is desire. The motive owes its force to the object; desire, to the subject.

Every desire tends to induce the mind to pursue the object represented to it as attractive, to fly the object represented as repulsive. The object which is presented to the will as a good, may be a real or only an apparent good. Similarly, an object which is presented to the will as an evil, may be a real or only an apparent evil. When the will is attracted by an evil object, it is so attracted because the object is presented to it as an apparent good.

When there are several motives impelling the mind to action, the mind must make a choice. In a Presidential election in this country, when there are two or three conspicuous candidates before the people, some voters feel it necessary to deliberate, to inquire into the merits of each, to read his addresses, to study the platform of his party, to consider the character of his supporters, to get an estimate of his mental power and his fitness for the high office to which he aspires.

Choice is the acceptance or rejection by the mind of a proposed act after the motives for and against it have been considered.

Every agent acts for some end. Only a rational being knows the end in view. An animal will kill another animal. But there is no evidence that the killer knows why it kills.

It is the prerogative of man to pursue a known end. In the pursuit of the end, he selects means which he knows are suited to his purpose.

Deliberation is the act of the intellect. The de-

termination of the particular means to be employed in the attainment of an end is the act of the will.

Will manifests itself in various ways. Perhaps the most obvious manifestation of it is in the deliberate transfer of attention from one subject to another, and the concentration of attention upon any subject which we select for special consideration.

A student in preparing his class-matter, if he does his work thoroughly, will take up each subject in turn, and keep his attention fixed upon it until he has acquired the information which the professor expects him to possess.

It requires probably as much will-power to divert attention to a new subject as to keep it fixed on an old one, especially if the new subject have no special attraction. Yet we can perform this task, as we know from experience.

The will cannot control feeling, but it can control the outward manifestation of feeling. A man cannot help hearing the ugly words addressed to him, nor can he control the internal experience which results from a sudden and violent noise; but he can acquire a perfect mastery over his speech and conduct.

Sometimes people wonder why they should be able to move their muscles at will. If they will only remember that all the vital powers of man are powers of the soul, the mystery will lose much of its mysteriousness. Not only the powers of thought and volition, but the sentient and vegetative powers, all are rooted in the same soul. That one soul is functioning in various ways, now as

the principle of rational life, now as the principle of sentient life, and again as the principle of vegetative life. There is a harmony between all the manifestations of life within us, because all the various powers which life manifests are rooted in one and the same principle.

The principle is one, but the powers are distinct. It is because of this distinction that the will cannot exercise equal control over all the powers. Experience assures us that some of our muscular movements are under the control of the will. We are equally certain that the operations of the sentient and vegetative functions are not under the control of the will. The will has no control over the eye which will enable it to determine what the eye shall or shall not see when it looks at an object. The will has no control over the stomach by which it can compel the stomach to perform a three-hours' task in a single hour.

The will can determine in what direction the eye shall look. It exercises this power by its control over the muscles of the neck and head. But it cannot determine what the eye shall see when it does look.

The will can determine what shall go into the stomach. The will cannot determine how the stomach shall transform the matter which has been put into it.

There are limitations upon the control which the will can exercise over the other powers. Nature has wisely relieved it of the unnecessary burden of controlling actions that can be performed much more perfectly by powers which operate automatically. The control of the will is restricted

to the management of the powers which are not automatic in their action, and which therefore require special direction.

The afferent nerves operate automatically. The efferent nerves of the cerebro-spinal system clearly appear to be under the control of the will in transmitting messages to the muscles. And, however it does it, the will appears to have such control over the brain that it can direct its activity to the production of some, though not all, of the images which it may wish to have recalled.

49. Habit.—To relieve the will of the obligation of requiring the intellect to deliberate upon the propriety of every individual muscular movement, nature seems to have put it into the power of the nerves to store up past commands in the form of permanent inclinations which we call bodily habits. The nerves are not like the slate upon which a lesson can be written and then washed off so completely that no trace of it remains. In early life the nervous system is plastic. Upon the nervous system in early life, as upon moist plaster of Paris, it is possible to make any impression one chooses. And, like plaster of Paris, the nervous system soon hardens, retaining permanently the impressions made upon it. By repeated impressions upon the nervous system while it is plastic, our habits are formed. If we are artists in design and execution, our habits will unite to form a masterpiece. If we have no worthy ideals of our own, if we have no model to guide us, or if we are awkward in execution, the image of the mind impressed upon the nerves will be a crude production.

Once the lines have been formed, and the nerves have lost their plasticity, the image remains. We may later, by means of the chisel, carve new lines; but the old will remain until they have been chiseled away.

The impressions we make upon the muscular nerves by our acts, induce us to repeat them, because repetition is easier than innovation.

In this way our bodily habits are formed. They store up the results of previous volitions. They relieve the will of the burden of constant attention to acts that are frequently repeated.

The brain itself seems amenable to the same sort of discipline. Phantasms frequently formed tend to recur without attention. In consequence, the stream of thought which passes through our intellects and which is extrinsically dependent upon these phantasms, tends to return again and again. Each of us has a set of ideas by which he is distinguished. When we know a man intimately we are able to forecast how he is likely to view any question proposed to him. When a stranger comes among us, we are obliged to study him carefully for a time until we appraise him. Appraising him merely means finding out the set of ideas which constitute the body of that stream of thought which repeats its passage through his mind.

Day after day, and year after year, the same stream of thought courses through the mind of the business man, the society lady, the politician, and every other man or woman. It accounts for the uniformity of our judgments and conduct. It is not that we cannot think otherwise if we choose.

But it is easier to think along established lines. Repetition is easier than innovation because of the tendencies to repetition stored up in the nerves. This is one of the causes that make it so difficult for a person to change his religious affiliations, his political allegiance, his business practices, his social estimates, his moral or scientific principles. *The nerves do not think. But their co-operation is an extrinsic condition of thought.* The intellect, which does think, finds it easier to think along the lines which the phantasms naturally follow, and the phantasms follow the tendencies which have been impressed upon the nerves.

The impressions upon the nerves which constitute the physical basis of habit, begin in infancy and continue throughout life. By the time the person has reached maturity they have taken definite form. Further experience only deepens the lines and makes it all the more difficult to chisel them away.

This tendency of the nervous system to repetition shows us how important it is to see to it that in infancy, childhood and adolescence the individual be given opportunity and encouragement to perform the acts which will leave such impressions upon the nervous system that the resulting tendency will be towards good. The nervous system will not be trifled with. It is constantly piling up credits or debits to the account of the will. It contains the record of our volitions embodied in tendencies. As it is possible to form an estimate of the character of a line of absolute monarchs from the character of the people whom they have ruled, so it is possible to form an esti-

mate of the character of the will of the individual from his habitual conduct. The present act may not receive much attention from intellect or will. Yet it is a product of thought and choice acting during the years when the tendencies of the nervous system were taking shape.

The tendency to repetition reveals itself clearly in our physical actions, in walking, in running, in writing, in playing upon an instrument, in the physical operations connected with any trade or profession. Each of us has a voice and a manner of speaking by which he may easily be recognized. The child can be taught to speak in almost any manner. The child of American parents who is brought up in France and educated in French schools will speak French like a native. If he were brought up in America and began French when he entered High School, his French accent would probably be foreign. When the student has reached the High School age his nerves have acquired a definite set of impressions, and consequently of tendencies, which make it next to impossible for him so to control them that they will respond to the exigencies of a new language. Even the erroneous sounds which he utters in pronouncing his own language, he will find it extremely difficult to correct. The tendency impressed upon the nerves in early years, remains with them for good or ill.[1]

50. **Character.**—Character is the disposition of mind resulting from the union of habits with

[1]The influence of the nervous system upon habit, and of habit upon the mind of the individual, is splendidly developed by William James, *Principles of Psychology*, ch. IV.

heredity. Each of us has a native tendency to a certain kind of action. Some are inclined to anger, to act without much deliberation, to work for noble purposes. Some are light-hearted, brilliant, enthusiastic. Some experience no strong impulse to do anything notably good or bad. Others have a marked tendency to melancholy brooding.

These various tendencies were called by the Greeks the choleric, sanguine, phlegmatic, melancholic temperaments. These temperaments they associated with the humors of the body. Modern science substitutes the nervous system for bodily humors.

These native tendencies rarely come in assorted packages labeled as the Greeks labeled them. Every individual has all of these traits in some degree, and some of them are found in particular individuals in a very marked degree.

These so-called native tendencies are very amenable to discipline if the individual is subjected to it.

Habit, more than inherited temperament, determines character. We have it in our power to produce our own characters.

St. Ignatius of Loyola was naturally of a choleric temperament and in his early years was accustomed to yield to his natural inclination. After his "conversion" he acquired so complete a mastery over his inherited temperament, and so complete a victory over his former habits, that he was no longer in danger of yielding to anger. By the exercise of will, he had transformed his character.

The individual is aided or hindered by the qualities of the organism which he has inherited from his parents. Environment is an aid or a hindrance to the formation of good habits of mind and body. But we are too much inclined to look for an alibi to account for our deficiencies. Neither the intellectual nor the moral aids of the modern city were at the command of Abraham Lincoln in his youth. Yet how many of us could afford to permit our characters to be placed in comparison with his? The fact seems to be that we shape our characters by permitting temperament to dominate, or by dominating temperament. Temperament may be an enemy or an ally. It cannot deprive us of the power of choice.

By nature we are able to choose the acts which we shall repeat, and so to choose our habits and the character which results from them.

> "Lives of great men all remind us
> We can make our lives sublime,"

expresses a trite sentiment, but it is as true as it is trite. We cannot all do brilliant things, but we can all do good things. In so far as our future depends upon our present good deeds, it may be said with truth that each of us is the author of his own fate by forming his own character.

51. To make our position as clear as possible at the outset, we shall declare at once what we mean by free will. By this term we understand the mental power of self-determination in view of a known end.

Not everything that is capable of producing an effect possesses the power of self-determination. Electricity can produce marvelous effects. But, fortunately for the investors in transportation lines, in telegraph and telephone systems, electricity has no power of self-determination. It cannot by its own choice determine what work it will do. It may be employed to haul cars, to light streets, to carry messages, to end human life. The purpose which it serves is not selected by itself, but by something outside itself. It goes where it must and always works to the best of its power.

The mere animal is able to perform certain acts as if it had the power of self-determination. The actions of the dog are altogether different from the actions of electricity. The dog wanders about apparently at will. But there is no evidence to indicate that even the dog has the power of self-determination in view of a known end.

The dog evidently has sensuous powers of apprehension and of appetition. It can desire to possess the object which it apprehends. But there is no evidence to indicate that the dog apprehends the purpose which will be served by the

possession of the object desired. It can desire a chunk of meat. But does it realize the purpose to be attained by eating the meat? Does the dog realize the relation between food and bodily health and strength? There is nothing to indicate that it does. The dog eats what, where, and when, it can. Apparently it leaves the consequences to take care of themselves. Mankind refuses to hold the dog responsible for the consequences of its action. Yet if the dog realized the consequences of its action and had the power of self-determination in view of the consequences, there is no reason why it should not be held responsible. A sheep farmer may kill a dog which has killed a sheep; but the farmer does not kill the dog as a punishment for killing the sheep. The sheep-killing dog does the farmer a great injury. But the dog does not realize it. When the farmer concludes that there is no way of saving his sheep except by killing the dog, he kills it. The farmer kills the dog, not because the dog has the power of self-determination in view of a known end, but because, not possessing this power, it is a menace to his interests.

The evidence that man possesses free will, as we have defined it, is all about us.

A boy enters college. What is his purpose? Does he desire an education? A degree? A pleasant place to spend four years? To satisfy his parents, who wish to make something out of him? It might be any one of these purposes. It is certain that he himself has a purpose in coming to college, or somebody has a purpose in sending him there. Before he completes his college

course some member of the faculty is likely to inquire into his purpose concerning the future. Does he propose to take up a profession or to enter business?

Whether or not the boy has a clearly defined purpose in coming to college, he is capable of having one; and many of his companions have such a purpose. The work of the four years in college is performed with a view to the end to be attained.

In electing to work for the attainment of this end, the student exercises the power of self-determination. Sometimes he works hard at his studies. Sometimes he participates in games or other amusements.

Unlike electricity, he is not always doing his best. Unlike the dog, he does not indulge his appetite to the limit of his capacity. His power of self-determination involves self-control. The attractions of sport may be intense; yet he has the power to stick at his books while others are on the field. When he chooses to do so, he studies; when he chooses, he takes part in sport, in a dance, plays the piano, listens to a lecture, reads a novel.

He is capable of doing any one of a multitude of things at any one moment. By nature he is indifferent to all. Yet he does one. What is it that removes his natural indifference to the particular act? Are his actions determined by the stars? By some invisible spirit hovering over him? By the reaction of his nervous system to the influences of material causes acting upon it? If you ask him, he will tell you that he is doing it

because he chooses to do it, that he has a purpose in view, and that through his action he expects to attain his purpose. In other words, he tells you that he has the power of self-determination in view of a known end. *To him the possession of this power is a fact so clearly perceived that he cannot doubt it.*

The whole social system is based upon the assumption that the normal person has free will. The state makes laws for its citizens. It makes laws about animals, not for them. It makes laws about electricity, not for it. Animals and electricity are subject to laws which the state did not make and which the state cannot alter. A constitutional amendment against the use of catnip by cats would have no influence on the conduct of the cat.

A civil law assumes intelligence and the power of self-determination in the citizen. Only by his intelligence can he come to a knowledge of its existence. Only by the power of self-determination can he observe it.

The legal trial is based upon the assumption that man is free and responsible, that he is answerable to the people for his conduct, that his violation of the law is wilful and culpable. The fact that the legal trial is to be found in every state and in every age, indicates that it is natural for man to believe in free will.

In business, social and private life, the man who deliberately commits an act which brings calamity upon his head, may be pitied, but none the less is he held responsible for his misfortune. Man has the power to control his conduct, and the

world expects that his conduct will correspond to his power.

The psychological basis of free will is to be sought in the relation of the will to the intellect. The will can make choice only of the objects proposed to it by the intellect. Objects so proposed are the motives which tend to move the will to make a choice.

As proposed by the intellect every finite object appears as an indifferent good. In so far as it has being, it is good in the metaphysical sense. In the same sense, in so far as it lacks being, it lacks goodness in some measure. As having goodness, it is a possible object of choice. As lacking goodness in any measure, it can be rejected.

"*Appetitus sequitur formam*"—the capacity of the appetition conforms to the capacity of the apprehension. When the apprehensive power is capable of grasping the infinite, only the infinite can exhaust the capacity of the appetitive power.

Thus the finite good, though an object of possible choice for the human will, cannot necessitate acceptance.[1] The finite good at best is only an indifferent, not an absolutely necessary, good.

[1] "For there are certain individual goods which have not a necessary connection with happiness, because without them a man can be happy, and to such the will does not adhere of necessity. But there are some things which have a necessary connection with happiness, by means of which things a man adheres to God, in Whom alone true happiness consists. Nevertheless, until through the certitude of the Divine Vision the necessity of such connection be shown, the will does not adhere to God of necessity, nor to those things which are of

52. **Free Will and Assent.**—In making its choice the will is directed by the intellect. But it has control even over intellectual assent when the evidence for the truth of the judgment is not apparent to the intellect. And since it is never evident that any finite good must be chosen, the assent of the intellect to the judgment that any particular good should be chosen, is a will-controlled assent.

> "But man acts from judgment because by his apprehensive power he judges that something should be avoided or sought. But because this judgment, in the case of some particular act, is not from a natural instinct, but from some act of comparison in the reason, therefore he acts from *free judgment* and retains the power of being inclined to various things. For reason in contingent matters may follow opposite courses, as we see in dialectic syllogisms and rhetorical arguments. Now particular operations are contingent, and therefore in such matters the judgment of reason may follow opposite courses and is not determinate to one." [1]

We regard the intellect as the eye of the soul, and therefore as a power which acts of necessity. It cannot help seeing what is before it, and affirming that it sees what it sees.

If, therefore, its assent to a judgment is to be free, it must be an assent which is under the control of the will. The will must consent to the assent to a free judgment.

God. But the will of the man who sees God in His essence of necessity adheres to God, just as we now desire of necessity to be happy. It is therefore clear that the will does not desire of necessity whatever it desires." (Q. LXXXII. A. 2.)

[1] Q. LXXXIII. A. 1.

When Eve looked at the apple to which the serpent directed her attention, her intellect necessarily assented to the judgment: "This apple is fair to the eyes and delightful to behold."

But did her intellect yield a necessary assent to the second judgment: "The goodness of this apple is such that I should eat it"?

The judgment by which she pronounced the apple "fair to the eyes and delightful to behold," was a speculative judgment. It was a judgment which had no necessary relation to action. It was a judgment to which a good angel might assent. The speculative judgment is the mental reply to the question: What is this thing?

The practical judgment is the mental reply to the question: What action should be taken about this matter? "The goodness of this apple is such that I should eat it" expressed a practical judgment.

Assent to a speculative judgment is sometimes necessary, sometimes free. Assent to a practical judgment concerning a finite good, is always free.

The intellect cannot refuse to assent to a speculative judgment when the truth is *immediately* evident. Verbally it is possible to quibble about it. Practically it is impossible. The idealist who denies the existence of material realities, will step aside to avoid a truck as readily as the materialist. By his conduct he reveals his assent to the speculative judgment that bodies exist independently of the mind.

The intellect cannot refuse its assent to a *speculative judgment* when the truth is demonstrated and the force of the demonstration is perceived by

the mind. To refuse to assent to a demonstrated truth, when the refusal is equivalent to the denial of the first principles of knowledge, would be an act of intellectual suicide, of which the intellect is not capable.

In the different sciences there are many truths which are demonstrated. But these truths can necessitate assent only when the force of the demonstration is clearly apprehended.

Religious truth can be so demonstrated; but it is no more capable than natural truth of compelling assent, unless the force of the demonstration fully manifests itself to the mind.

Assents necessitated by scientific demonstration are few, for the reason that few persons are capable of appreciating the full force of a scientifically demonstrated truth.

> "For reason in contingent matters may follow opposite courses * * * and is not determinate to one."[1]

Speculative propositions whose denial does not involve the rejection of the first principles of knowledge are "contingent." When such propositions are proposed to the mind for its acceptance, the mind is not compelled to assent to either side of them under pain of intellectual damnation. If it does assent to either side, it assents freely.

The propositions contained in a political platform are usually of a contingent character. "A high tariff is the best thing for the country" is a proposition which is neither necessarily true, nor necessarily false. Citizens may assent to

[1] Q. LXXXIII, A. 1.

either side of the proposition. As a fact, citizens do take opposite sides on this question, and assent unreservedly to the side which they embrace.

"Jones is guilty of murder in the first degree" is the judgment to which several of the jurors impaneled to try the case assent. The others may refuse to assent to this judgment. Juries can and do disagree without assuming the attitude of skeptics.

We all assent to the proposition that the earth revolves upon its axis. But how many of us accept it because of the demonstration, and how many because someone in whom we have confidence has told us that we should assent to it?

We have assented to a multitude of propositions whose truth we cannot demonstrate. The truth may be capable of demonstration and actually demonstrated, but the force of the demonstration has not manifested itself to our minds.

By this we do not mean to imply that such assents are irrational. They are rational, if we know, as we often do, that it is practically impossible for our informant either to deceive us or to be deceived himself.

Children believe their parents. It is important that they should have confidence in their parents. Without this confidence they would not assent to the many useful truths which their parents teach them.

It may be a moral impossibility for children to refuse assent to the propositions which parents propose for their acceptance.

But when the parents themselves are asked to

accept a proposition on the authority of a speaker or writer, have they that reverence for the wisdom and omniscience of their informant that children have for their parents?

We are accustomed today to see nearly every conceivable subject treated in the public press. The matter is usually presented in a readable style. We read and discuss it. We assume that we are as able as anyone else to perceive the true solution of the problem treated. The subject may concern politics, science, economics, religion, history. It matters not much what the subject is. We read and "make up our minds"; that is, we assent to some judgment about the matter. The judgment to which we assent may be true or false. Whether true or false, we have assented to it. Like the wife of the Vicar of Wakefield, having made up our minds, we are prepared to listen to reason. Usually we listen in an attitude of self-sufficiency. We are disposed to teach rather than be taught. While we are in this attitude of mind, let a person address us who is an authority upon the subject in question. What does his authority amount to? True, he has devoted years, perhaps a lifetime, to the study. But haven't we just read a succinct, clear and comprehensive statement of it in the newspapers? Why shouldn't we be just as competent as he is to pronounce a true judgment upon the subject?

This is a possible attitude of mind towards authority. It is the actual attitude which we often assume. It is the attitude which those parents often assume who demand and receive un-

questioning acceptance of their teachings from their children.

Of course such judgments as we do assent to in these circumstances, are not forced upon the mind by the objective truth. We assent to a proposition upon the authority of an unknown writer, probably on the assumption that his article would not appear in the newspaper unless absolutely true; and we refuse to accept a proposition on the authority of a student who has devoted his life to the subject, and whose knowledge of it equals or surpasses that of the newspaper writer, or his authority.

There are some propositions which we hold on authority, and from which we cannot rationally withdraw our assent. We cannot rationally withdraw our assent to the proposition that there is a city in England called London which has a very large population. The authority for this fact is so overwhelming that, even though we may not love England, we must assent to it.

But to withdraw assent already given, and to refuse assent sought but not given, are different acts of the mind.

There were Germans in this country who, after the fateful November 11, 1918, refused to believe that Germany had surrendered to the Allies. There it was, in the newspapers from which they had obtained all their information about the War. They believed in the fact of the War. They refused to assent to the proposition that Germany had surrendered. Of course the real reason was that they did not wish to assent to it. They assented to the judgment that the newspaper

account was false, which was certainly not a necessary assent. And the assent to the fact of surrender given by others was not a necessary assent at the time. One or two premature announcements of surrender were made. Why could not the final announcement also be false? Some Germans thought it was. They did not assent to the truth of the report. They were not obliged to assent. Neither were those who did assent obliged to do so. Later, the dissenters did assent. Testimony coming in from a variety of sources, and all tending to the same effect, made the opposite proposition untenable. Though regretting the necessity that compelled assent, they recognized its force, and admitted the fact of surrender.

The final admission was a rational act. The earlier refusal to assent, at first rational, became less and less rational as the evidence against it accumulated.

The point was finally reached when the mind could no longer refuse its assent without rejecting one of the first principles of knowledge, the reliability of human testimony when all possibility of deceit and error has been eliminated. When this point was reached, assent became inevitable.

When a speculative proposition is proposed for our acceptance which cannot be rejected without rejecting one of the first principles of knowledge, our assent is necessary. When a fact is immediately evident to us, as that the sun is shining, we cannot reject it, for the same reason.

We are necessitated by the law of our rational nature to recognize the fact of our existence, of

our capacity to apprehend truth, of the existence of an external world, that a thing cannot be and not be at the same time and under the same circumstances, that human testimony cannot be false when all possibility of error and deceit has been eliminated.

We cannot assent to a judgment when we know that the judgment contradicts any one of these first principles.

We cannot refuse assent to a judgment when our refusal is equivalent to a rejection of one of these principles.

We are free to formulate propositions in opposition to these truths. But, in doing so, we are merely toying with words. Bishop Berkeley never really assented to the proposition that there is no external world, or he would not have written a book to establish his theory.

When we can link up our judgment with the first principles of knowledge so closely that the denial of the truth of our judgment would involve the denial of some one of the first principles of knowledge, we have the objective basis which we require for formal certitude. We have linked up our thought with the objective fact.

The pursuit of truth is directed by the will. Every assent on the way to the perfect demonstration, is a free assent unless the truth to which assent is given is immediately or mediately evident. When finally the truth which is the object of investigation is established, and its connection with some first principle of knowledge ascertained beyond doubt, assent follows of necessity. The assent given to a speculative judgment which de-

serves to be classed as formally certain is a necessary assent.[1]

All other assents to speculative judgments are freely given. Some of them might, upon investigation, be proved to rest upon the basis which is required for formal certitude. But until it is manifested to the mind that the assent does rest upon such a basis, it is a free assent.

Unlike the assent given to a speculative judgment which is sometimes necessary, sometimes free, the assent given to a practical judgment is always free.

Assent is always free when not necessitated by the objective truth made manifest to the mind.

[1] The blasphemer cannot yield a speculative assent to the judgment: "It is *right* for me to blaspheme here and now," if he so connects the act of blasphemy with the first principles of morality that its immorality is evident. He cannot give a speculative assent to a judgment which he knows is false.

He may, however, give a practical assent to the judgment which declares: "It is *good* for me to blaspheme here and now." Else, how explain guilty blasphemies? Blasphemy, when its malice is apprehended, is clearly contrary to the dictates of conscience. Yet we know from our own experience, and from the experience of others, that it is possible to commit an act which is contrary to the dictates of conscience. Still, one cannot act deliberately in any way, he cannot even blaspheme, without some object in view, an end, to the attainment of which his action is directed. The attainment of this end is regarded by him at the present moment as a good. So regarded, it is a possible object of choice. The choice, when made, follows upon an assent freely yielded to the judgment that the proposed act promises the attainment of some object here and now desirable.

The assent to a practical judgment in this life is never necessitated by objective truth. When Eve assented to the practical judgment: "The goodness of this apple is such that I should choose it," her assent was not necessitated by objective truth. Substitute for "apple" in the above proposition the name of any other object you see fit, and substitute for "Eve" the name of any other person, and it will still remain true that assent to a practical judgment is not necessitated —except in the one instance when the soul is in the immediate presence of the Infinite Good.

The Catechetical Form.—To simplify the presentation of the subject it might be well to put down the matter in the form of question and answer:

I. When the voter has carefully considered the merits of the various candidates seeking his support, what is it that determines his choice?

A. The will determines its own choice.

II. Is not the will determined by motives?

A. No. Motives attract the will. They do not determine it.

III. Has free volition any cause whatever?

A. Yes. The free will is the cause of the volition.

IV. Can the will determine itself without any motive before it?

A. No. The will requires a motive for choice.

V. Why not say, then, that the motive determines the will?

A. Because the motive only attracts the will. The motive impels to choice, but does not compel it.

VI. If the Infinite Good, apprehended as infinite, can necessitate the will, why cannot a finite good do so?

A. The pull upon the will by the infinite, apprehended as infinite, is that of an infinite magnet. There is no resisting its attraction.

The finite, in so far as it is finite, is unmagnetic. By concentrating upon the limitations of the finite, its unmagnetic side, the will is able to repel it.

The will in relation to the objects proposed to it by the intellect is in a somewhat similar position to the public executive who, in selecting workers for positions that are under the Civil Service Law, must make his selections from the names submitted by the Civil Service examination board; but, unless the Law provides otherwise, he may select any man whose name appears on the list. He is not required to select the highest on the list. Similarly the will can select only from the list of motives presented to it by the intellect. But it can select any good that is on the list. It need not select the highest good.

VII. Since choice always conforms to judgment, how can choice be said to be free?

A. The assent to a practical judgment is a will-controlled assent. The power of the will to determine the intellectual assent to a practical judgment involves the power to accept or reject the object proposed for choice.

54. Ideo-Motor Action.—It seems clear enough that the bodily acts which are due to the influence of mental abnormalities, such as somnambulism and insanity, may be classed as ideo-motor actions, manifesting the reflex activity of the cerebrum.

Should the act of writing which I now perform be so classed? According to Dr. Carpenter (1813-1885), who gives full recognition to the existence and freedom of the will, our habitual acts should be classed as ideo-motor actions when the mind does not concentrate special attention upon them. And if they are to be called ideo-motor actions, they should not be called voluntary actions, according to the same authority.[1]

Our problem, therefore, comes to this: Should our ordinary acts, such as walking, expressing

[1] "Although it has been usual to designate by the term *voluntary* all those muscular movements which take place as the result of mental operations, save when they are the expression of emotional states; yet a careful analysis of the sources from which many of our ordinary actions proceed, will show that the will has no direct participation in producing them; and that they are, psychologically speaking, the direct manifestations of ideational state excited to a certain measure of intensity, or, in physiological language, reflex actions of the cerebrum." *(Mental Physiology,* p. 279.)

"We may range under the same category all those actions performed by us in our ordinary course of life. * * * Of this kind the act of expressing thoughts in language, whether by speech or by writing, may be considered as a good example." (*Ibid.,* p. 280.)

thought orally or in writing, or exercising any art, be classed as voluntary? Has the external act the right to be termed a voluntary act?

If we look at the act of writing as it appears to the eye, we are inclined to attribute all the credit for the work of writing to the fingers alone. We see them at work. We see no power guiding their movements.

The theory of ideo-motor action recognizes the fact that there is a power at work behind the scenes, directing the movements of the fingers. What is that power according to this theory? The idea! The muscles are moved by reflex activity issuing from the brain upon the formation of an idea. Inasmuch as the activity of my muscles, according to this theory, is reflex, the action of my muscles should not be classed as voluntary.

And, taking the movements separately, they should not be classed as voluntary. I do not pause to choose the particular muscle which I shall exercise, nor how I shall employ it, as I write. Long ago I acquired the art of writing. But what does the exercise of this art involve? It involves the transcription upon the page of the phantasms produced by my imagination. And the analysis of my mental operations informs me that these phantasms are consequent upon concepts. Of the multitude of judgments which flock into my mind when I sit down to write, I reject some and accept others; in other words, I choose what judgments I shall express. When my intellect works, my imagination and memory also work, producing phantasms. Phantasms are

products of brain activity. The brain in action sets up movements in the nerves which control the muscles. Bodily activity follows.

These so-called ideo-motor actions are the exercise of a habit, in which all the powers of the mind co-operate to guide the muscular powers in the execution of the task imposed upon them.

Such actions, when consciously performed by sane persons, may be denominated voluntary actions with as much propriety as the collection of customs duties at a port may be called acts of the executive department of the Government. The collection of duties requires no special attention of the Chief Executive. Yet the acts are under his control. If an error is committed, he requires that it be corrected. The Chief Executive in his physical person does not perform the task. But he sees that it is performed, and controls the performance, at least permissively.[1]

Among the powers of the mind the will is the Chief Executive.

As Chief Executive of the mind, the will sets in motion all the powers of the mind. As the Chief Executive of the State summons the legislative department to assemble for the enactment of legislation, so the will summons the intellect to pass judgment upon the matters presented to it for accomplishment, and orders its subordinate powers to carry out the judgments of the intellect. It is not necessary for the will to reiterate at every instant its command to its subordinate

[1] Dr. Carpenter recognizes the permissive attitude of the will: "It is the dominant idea, then, which really determines these movements, the will simply *permitting* them." (*Ibid.*, p. 281.)

powers, any more than it is necessary for the Chief Executive of the Nation to give directions at every instant to his subordinate officials. In the execution of their functions the officials apply the laws made by Congress, in harmonious subordination one to another. But they are not, therefore, free from the control of the Chief Executive. At all times they are his subordinates, carrying out his commands. So, too, the subordinate powers of the mind, in the execution of the commands imposed by the will, are directed by one another, but always in subordination to the power of the Chief Executive of the mind—the will.

We must, therefore, either deny that the collection of duties is entitled to be called an act of the Government, or admit that writing, walking, and similar habitual acts, deserve to be classed as voluntary.

Scholastic psychologists distinguish between the *actus elicitus* and the *actus imperatus voluntatis.*

The elicited act of the will is its own act. The commanded act is the act of another power subject to its control.

Both the internal act of choice and the deliberate external execution of the internal act are called *actus humani.*

The *actus humanus* is a free act, elected after deliberation. The *actus hominis* is an indeliberate [1] act. The use of profanity by a person accustomed to it may, at times, be classed as an *actus hominis,* as in the instance of the old mili-

[1] See Arregui, *Sum. Theol. Mor.* 2-5.

tary officer mentioned by Dr. Carpenter.[1] Evidently the *actus hominis,* since it is an indeliberate act, cannot be classed as a voluntary act in the strict sense. It is not even permissively voluntary. The *actus hominis* can properly be classed as ideo-motor in the strict sense. But there is a wide difference between the *actus hominis,* which Dr. Carpenter classes as ideo-motor, and the habitual acts, such as deliberately expressing thought by writing, which Dr. Carpenter also classes as ideo-motor. By scholastics the act of writing, consciously and deliberately performed, is an *actus humanus.* For the voluntary act (the *voluntarium* of moral theology), a virtual intention is sufficient. The actual intention which dominates the mind in writing is virtual in relation to the particular actions involved.

Sometimes, through inattention, we write a wrong address on an envelope, as when a New Yorker directs a letter to 300 E. 155th St., Baltimore, D. C. In looking over the addresses, before sending the letters to the post-office, the writer discovers his error, tears off the envelope, encloses the letter in another envelope, and addresses it correctly. In writing the correct address the writer concentrates his attention upon his action. In putting down the incorrect address, the action of the writer may be called ideo-motor in the sense of Dr. Carpenter. It should not be called a voluntary act. The writer does not "choose" to send his letter to Baltimore, D. C. His fingers follow his phantasms without any con-

[1] *Op. cit.,* p. 282.

trol of the will. But when he writes the address correctly on the new envelope, his action is deliberate, voluntary. He knows what address he is writing, and he chooses to write it.

Habitual acts which are not due to *any* intention of the will may properly be called ideo-motor. Habitual acts which are due to a virtual intention of the will, such as the ordinary act of writing, are under the control of the will, and deserve to be called voluntary.

55. Objections Against Free Will Considered

Objection (I):

"Scientific" psychology demonstrates that the mind is a sum of processes. It is conceivable that a substantial, spiritual principle might choose freely, but it is inconceivable that a sum of processes should be able to choose.[1]

Answer:

In our discussion of the theory of Professor James, we gave our views of the value of this theory.

In relation to the freedom of the will, our inference is that if the mind be nothing but "a stream of processes," there can be no such thing as free will.

On the other hand, as we are certain of the mental fact that our choice is free, our inference must be that "that which feels and thinks and wills" is something more substantial than "a stream of processes."

Objection (II):

Mental and physical motion are governed by the same laws. The line of least resistance is the line which is followed by the mind no less than by electricity.[2]

Answer:

This objection is probably true of merely sentient minds. But it by no means expresses the

[1] See *Primer of Psychology*, Titchener, p. 225.
[2] See *Human Psychology*, Warren, p. 431.

truth concerning the mind which possesses spiritual power. The will is indeed attracted to the object in proportion to its power. But attraction and choice are not the same. As applied to the rational appetite, this objection is based upon a gratuitous assumption.

Objection (III):

The application of the principles of physics and chemistry to man enables science to explain all mental as well as all bodily functions.[1]

Answer:

If this objection has any meaning whatever, it is an expression of pure materialism. Descartes believed the body to be a mere machine. This objection goes further. It makes mind merely a function of a combination of physical and chemical forces.

In Part II we showed that even the living body cannot be explained merely as a combination of physical and chemical forces. When physicists and chemists succeed in producing an automaton which manifests all the mental phenomena of which we are conscious, it will be time to admit that "the actual workings of volition are capable of being explained according to physical and chemical principles."

Objection (IV):

Dr. Bain:

> "When a person chooses one thing out of several presented, the choice is said to involve liberty or freedom. The simple fact is that each one of the

[1] See *Human Psychology*, p. 431.

objects has a certain attraction; while that fixed on is presumed to have the greatest attraction of any. There are three dishes before one at table; the one partaken of is what the individual likes best on the whole. * * * Any supposition of our acting without adequate motive leads at once to self-contradiction."[1]

"The proper meaning of 'free' is the absence of external compulsion. Every sentient being under a motive to act, and not interfered with by any other being, is to all intents free. The fox, impelled by hunger, and proceeding unmolested to the poultry yard, is a free agent."[2]

Answer:

Dr. Bain, as a sensationist, logically denied freedom of the will in the sense of the power of self-determination in view of a known end. His view of free will is consistent with his interpretation of mind, and stands or falls with it. In Part II we gave our estimate of the value of his philosophy of mind.

In writing about motive, apparently Dr. Bain failed to grasp the scholastic interpretation of it and its influence upon the will. We have already explained the relation of the motive to the will and the relation of the will to assent to a judgment concerning action.

Dr. Bain's fox is free from coercion; but he has no power of self-determination in view of a known end. It is true that the fox has the power to visit the poultry yard. His trouble is that he cannot keep away from it, unless deterred by physical force. His apprehension and appetite determine his conduct. A law against robbing the

[1] *Mental Science*, pp. 400, 401.
[2] *Ibid.*, pp. 398, 399.

chicken coop can have no effect upon a fox. The chicken has the same attraction for some humans that it has for the fox. But humans can be educated to respect property rights; the fox cannot. The human does what he chooses to do. The fox does what it must.

Objection (V):

Statistics are the best test to determine whether or not man enjoys freedom of choice. The constant ratio of crime to population suggests that the actions of the good and the bad are determined by heredity and environment, and that the acts of the individual member of society are, therefore, not free.[1]

Answer:

This is one of the arguments to show that "the balance of probabilities" is in favor of determinism, which is the denial of free will.

Heredity determines the organic structure. It does not determine its use. I owe my vocal organs to heredity. I owe my ability to sing to the use which I have chosen to make of my vocal organs.

The inherited structure is peculiar to the individual. Capacities are different. But no person inherits an art. Art is acquired. The individual may inherit an extraordinary capacity to excel in a particular art. But the excellence is not an inheritance. It is the product of repeated acts affecting the inherited structure. No person is born an artistic singer. The art of singing is acquired, with greater or less perfection, by a

[1] See *Human Psychology*, pp. 431, 432.

person who has inherited a structure capable of modification according to the demands of the art.

Environment does not impart to the will control of the muscles, nor does it take it away. Environment merely sets up a standard according to which the will makes its choice.

The notion that heredity and environment can be held responsible for the murder committed by a sane person is beginning to make its way into our courts. The notion owes its existence principally to the advocates of the evolutionary hypothesis as applied to the mind. The notion is, however, utterly without foundation, and directly opposed to the mental experience of every individual.

We are all aware that we can control our muscular movements except when they result from the reflex activity of the organism. It is conceivable that in a sudden brawl the drawing of a pistol and its discharge might be due to reflex acts over which the will has no control. It is not necessary to maintain that every killing committed in a brawl is due to a reflex act. But it is conceivable that it might be so in an individual case.

The murder committed by a sane person who has carefully selected his weapon and his victim cannot possibly be explained as the result of the reflex activity of the organism. A reflex act is always a single act due to the influence of some cause acting upon a particular nerve. A carefully planned murder committed by a sane person is certainly not the result of the reflex activity of the organism.

If, however, deliberate crimes cannot be ascribed to heredity, environment or reflex acts, how explain the constant phenomenon of the fixed ratio of crime to population? When an effect occurs so regularly that the future fact can be inferred with certainty, the facts are governed by law; for law is, in a sense, a regularly recurring phenomenon, or the force which underlies and controls it. Given the population of a city, according to this argument, the number of crimes to be committed can be computed with as much accuracy as the movements of the moon.

Is the assumption true? Is the ratio of crimes to population governed by an iron law?

In two neighboring cities where the treatment of juvenile offenses differs as a home differs from a prison, the fixed ratio of crime to population does not obtain. In the city with its antiquated refuge, with its brutal and inefficient guards, with no efficient system of parole, the commitment of the youthful offender to the refuge is his consignment to a school for scandal. He becomes acquainted with offenders more advanced in crime; the immoral principles of his associates become his standard of right; the brutal and inefficient guards make authority hateful and contemptible. Is it any wonder that, when he is graduated from such a school, he is intellectually, morally and physically, adapted to a career of more serious crime than that which brought him to the institution? Is it surprising that in due time his name appears on the records of the penitentiary and the prison? That he becomes a repeater, serving sentence after sentence, until, perhaps, he loses

his life in a brawl, an act of attempted violence, or, as a convicted murderer, in the electric chair?

In the neighboring city, where there is a modern penitentiary, offering opportunities to learn something useful, instead of the art of picking locks, under the kindly regard of prison authorities who are willing and able to reform character, the offender is initiated into the proper mode of caring for his body, of controlling his conduct, his thoughts and desires. When his sentence expires, he is prepared to go back to the outer world without rancor in his heart, with a wholesome regard for the rights of others, and his own obligations. Is it wonderful that his name is never again called by the clerk of the court, bidding him plead to a charge of violating the law?

Welfare workers do not claim that they can make a one hundred per cent record in reforming juvenile offenders. Some will relapse. But the success achieved, when the work is conducted with intelligence and sympathy, makes it clear that there is no fixed ratio of crimes to population.

We recognize, however, a certain sort of necessity in the members of criminal bands to perpetrate crime. But the necessity is moral, not physical. It is a necessity arising from custom. It is a necessity which conflicts with the *exercise* of free will, not with its *existence.*

"Birds of a feather flock together." Just as there is a disposition in America to make every citizen a one hundred per cent American, which means that he is to be perfectly assimilated into the social body, so in every society or group, there

is the same attempt to assimilate its elements. When the controlling elements are murderers and robbers, the assimilated elements will be murderers and robbers. These same elements, associated with other groups, would probably take on an entirely different character. The members of a group, of their own free will, choose to do those things which win the approbation of their fellows, and are consistent with the principles of the group. Separate twins so that one will grow up with an East Side gang, and the other in a Quaker family and each in his maturity will show the influence of the environment in which he has lived. Neither the East Side gang nor the Quaker family has destroyed the native power of the will to choose freely. But each has influenced the child entrusted to it, to think along certain lines, to recognize certain propositions as first principles, and to shape his conduct according to those principles.

Acting according to the principles impressed upon him, one of the twins becomes a robber and murderer; the other becomes a law-abiding citizen.

The fact of the continued ratio of crime to population where it does obtain, does not demonstrate the inability of the will to choose freely. Rather it is evidence of the obligation of society to improve the environment of the unfortunates who are brought under influences which make them a menace to society. The gang quarters are a school for scandal. The gang leaders are very effective pedagogues. Change the system of education and the constant ratio of crimes to population will cease.

Not only is that attitude anti-social which is opposed to the interests of the majority, but that also is anti-social which is opposed to the true welfare of any member of society. The anti-social activities of the robber and murderer are often enough reactions to the anti-social conduct of other members of society who have unfairly neglected or oppressed them. The anti-social attitude is nourished by injustice, real or imaginary. The unfortunate are inclined to hold the fortunate responsible for their environment. The fulfilment by society of its social obligation to provide a wholesome environment would tend to stifle the anti-social spirit of the unfortunate by starving it out of existence.

But no matter what the environment, there will be some crimes. Men will do what they feel like doing, not what they know they ought to do. Cain and Abel were brought up in the same environment; yet, while one was a saint, the other became a murderer. Out of the twelve Apostles one became a traitor. Environment can account for many crimes, but not for all; and even when environment is offered as an explanation, it explains only the external influences that act upon the mind. It throws no light upon the actual operations of the mind itself. While recognizing the force which external agencies exercise upon the mind, we must be careful not to exaggerate their influence. The attractiveness of the object, the force of environment, influence the will. They do not determine its choice.

Objection (VI):

> "There is no such thing as moral responsibility in the sense in which this expression is commonly used."[1]

Answer:

Mr. Darrow is a successful lawyer, not a psychologist, except in the sense that he knows how to "work" the mind, rather than how the mind works. If he is to be regarded as an authority in any subject, it should be in law.

We do not, therefore, cite him as a psychologist. We cite him as a witness to the practical significance of the evolutionary hypothesis as applied to the human mind. He accepts the evolutionary hypothesis as an interpretation of life. His views about the nature of man and the character of his mental acts show the inferences which any clear-minded man is likely to draw from the application of the evolutionary hypothesis to the human mind.[2]

Mr. Darrow attributes the same origin to all life, both human and brute.[3] He recognizes in man no power to reform his character, and maintains that no individual has ever reformed.[4]

[1] *Crime and its Treatment,* Clarence Darrow, p. 275.

[2] "It is surprising how few biologists see that the philosophical conclusion of Darwin's hypothesis is a mechanistic monism. The reason is: too many men of science are unwarrantably self-satisfied with the superiority and certainty of their scientific method and are but superficially trained in either philosophy or humanistic thought." (More, *The Dogma of Evolution,* p. 255.)

[3] p. 29.

[4] p. 276.

Conduct is not determined by moral principle, but by the involuntary reactions of the mind to the forces that act upon it.[1] Man, according to Mr. Darrow, has no more liberty than a machine. "He does as he must."[2]

If a man is no more than a highly developed brute, as materialistic evolution teaches, Mr. Darrow has given a correct account of his mental make-up.

Our whole discussion throughout this book goes to show that man is something more than an exalted brute: "In action how like an angel! In apprehension how like a god!" as Shakespeare puts it.

If the philosophy of evolution, as Mr. Darrow interprets it, becomes the gospel of this nation, it is difficult to understand how our present judicial system can continue to exist. If man can only do what he must, if he has no more liberty of action or responsibility for his conduct than a mere machine, why should he be subjected to trial and punishment? We do not indict an automobile for a smash-up. If the chauffeur has no more liberty than his machine, why indict the chauffeur?

According to this philosophy, Mr. Darrow's profession should be abolished. Human garages should be substituted for courts and prisons, and the human machine should be submitted to the care of mechanics rather than to the mercy of judge and jury. And when the court disappears, naturally the legislature will go with it. Why

[1] pp. 190, 191.
[2] p. 274.

legislate for a machine which can only do what it must?

This philosophy is a splendid basis for anarchy, and anarchists have not failed to realize it.

It is good logic which tells us that when a theory logically leads to an absurd consequence, the theory itself is absurd.

Mr. Darrow is entitled to the gratitude of all who believe that men should live in organized society, under laws made by a legislature, interpreted by a court, and enforced by public officials, for having pointed out so clearly the significance of the evolutionary hypothesis as applied to the human mind.

AFTERWORD

In this book we have traveled the road which we marked out for ourselves from the beginning. We have attempted to declare what the mind is, and what are some of its works. Our inferences concerning the nature of the mind we hold to be true as applied to every human being. Our inferences concerning the operations of the mind as set forth in Parts III and IV, we hold to be at least probably true, in so far as the normal person is concerned.

Our inferences concerning the workings of the human mind are necessarily general. They are based upon abstractions, which have a foundation in reality, but are nevertheless abstractions.

The individual cannot learn from our discussion what are his own peculiar powers and weaknesses, nor how best to regulate his mental life. But he can learn some all-important truths about his mental constitution, about the origin and destiny of the spiritual principle within him, about the powers which he possesses, and the propensities to which he is subject, in common with all other human beings, about the causes and effects of his mental activities, and the laws by which they are governed.

INDEX

INDEX

Abortion, 130
Abstract ideas, 263f.
Abstraction, 270
Abstract psychology defined, 3
Accidental modifications within a species, 9
Act of a man, 262, 355
Active intellect, 269
Activity, 88f.
Actus:
  elicitus, 355
  hominis, 355
  humanus, 355
  imperatus, 355
  primus, 58
Admiration, 251
Aesthetic emotions, 251
Alternating personality, 220-226
Altruistic, 251
Analysis and synthesis, 282
Analytic judgments, 294
Anger, 250
Animal, sensation of, 63
Annihilation, 134ff.
A posteriori reasoning, 295, 299
Apperception, 319-323
Appetite:
  rational, 324ff.
  sensuous, 234ff.
Apprehension:
  intellectual, 263ff.
  of the unseen, 283-285
A priori reasoning, 295, 299
Aristotelians, 69
Aristotle, xlv, 91, 114, 128, 152, *(note)* 159, 177, 194, 223, 270
Assent, 295
  and free will, 341-351
  to practical judgments, 342
  to speculative judgments, 342
Assimilation, mental, for memory, *see* Apperception
Association, mental, laws of, 199
Atomic theory, 15
Augustine, St., pre-existence of soul of first man, 125
Automatic movements, 236
Auto-suggestion, 218-220
Averroes, on intellect, 114
Awe, 251

Bain, Dr. Alexander:
  differs from St. Thomas, 83
  exponent of Double-Aspect Theory, 32, 50-57
  on mind, 150
  objection to free will, 359f.
Baldwin, James Mark:
  Dictionary of Philosophy and Psychology, on faculties, 153
  on dreams, 214
Beautiful, 251
Belief, 295

Berkeley, George, 32, 33-40
definition of mind, 33, 146, 150
differs from St. Thomas, 82, 84
exponent of Idealism, 32-40
meaning of personality, 160
Body, human:
composition of, 90-95
meaning of, 139
not a mere machine, 60-62
vital principle of, 87
Bowen, Francis, position of Descartes in philosophy, 68
Brain, 171
and mental derangement, *see* Alternating personality
Business psychology defined, 3

Capacity of soul a faculty, 153
Carpenter, Dr. William B.:
theory of ideo-motor action, 352, (*note*) 354, 356
two sides of shield, *(note)* 98
Categories, 277f.
Causality, principle of, ignored by James, 45-48
Cause, defined, 20
Causes, enumerated, 20
Cell, all bodily life originates in, 60-62
Chapman, John J., on present-day education, *(note)* 312
Character, 333-340
Cheerfulness, 217f.
Child's difficulty in forming concepts, 279, 289
Choice, 327
Classification of emotions, 249ff.
Common sense, the, 186-192
Comparative psychology, defined, 3
Composite, 81f., 96f., 139
Comte, Auguste, on reasoning, 297
Concept:
general, 54-56, 109f.
production of, 267-282
of self, 286
from words, 285-287
Consciousness, 24
Conscious subject, as a definition of mind, criticized, 146f.
Consent, of will, 341
Conservation:
of energy, law of, 117
of matter, law of, *(note)* 124, 136
Contiguity, law of, 199f.
Contrast, law of, 200
Control of self, 224-226
Conversation, 317-319
Coué, Emil, theory of auto-suggestion, 218-220
Courage, 250
Creation of soul, 122-130
Criterion:
Cartesian 67–80
scholastic, 75-79

Darrow, Clarence, objection against free will, 366-369
Darwin, Charles:
on Evolution, 9ff.
on nature of mental powers, 110
Day-dreaming, 315-317
Deduction, 299

Deliberation, 327
Delirium tremens, *see* Alternating personality
Delusion, 323
  insane, *see* Alternating personality
Democritus, notion of perception, 177
Demonstration, not possible for all truths, 37f.
Dependence:
  of intellect upon organism, 107-110
  of sensuous powers upon organism, 97-100
Derangement, mental, *see* Alternating personality
Descartes, Réné, 58-80
  consequences of his philosophy, 67-80
  criterion of, 77-79
  criticism of, 59-66
  definition of mind, 58, 146, 149-152
  of personality, 160
  notion of memory, 194
  problem in explaining production of intellectual apprehension, 273
  and sensation, 97f.
Desire, 250
Despair, 250
Determinism, 361-366
Double-Aspect Theory, 50-57
Doubt, Cartesian, 67
Dreams, 214-216
Duration of sensation, 180

Education, 122f.
  and instincts, 259f.
  and memory, 202, 209
Education (*cont'd*):
  and reasoning, 310–317
Efficient cause, 21
Emotion:
  and conduct, 252
  and passion, 244
  and sensation, 241-244
  species of, 249-252
Emotions, 241-252
  classification, 249ff.
Empirical ego, 192
Empirical psychology defined, 3
Empiricism, 32, 41-49
Energy, law of conservation of, 117-122
Entelechy, 128
Enthymeme, 302
Environment, 361ff.
  and education, *see* Reasoning and education
  influence upon will, *see* Free will, obj. V
Epicurus, notion of perception, 177
Epistemology, 296
Essence, abstract, 265
Evolution, 6-11
  Darwin on, 9
  More on, 10f.
Evolutionary psychology defined, 3
Excitation of sentient organism, 173-180
Exemplary cause, 21
Extension, excluded from general concept, 107ff.
External senses, 171f., 175
External world, reality of, 37f.

Faculties, mental, 153-162
Fancy, 213

Fear, 250f.
Fechner, G. T., theory of psycho-physics, 120-122
Feeling, 241
Fichte, J. G., exponent of Idealism, 32, 39
Final cause, 21
Fiske, John, on age of man, 12
Form, substantial, 91f.
  origin of, 124f.
Formal cause, 21
Formal inference, 300f.
Formal object, 22f.
Fra Angelico, imagination of, 232f.
Free will, 336-351

Generation, 122 f., 125ff.
Gerard, Rev. J., S. J., on instincts, 254
God and His Creatures, Of, 107, 125, 194
Gordy, on psychologists, 27

Habit, 330-333
Habitual acts, 256f.
Hate, 250
Heredity, 361ff.
Hope, 250
  and character, *see* Character
  and conduct, *see* Free will, obj. V
Horace, lines on imagination, 226
Human act, 262, 355
Hume, David:
  on mind, 36
  and substantiality of intellect, 104
Hunger, 260
Huxley, Thomas H., on science, 18
Hylomorphism, 91ff., 132
Hypnotic spell, 221

Idealism, 33-40
Ideals, 228
Ideas, intellectual, 263-291
Ideo-motor action, 352-357
Illusion, *see* Dreams
Imagination, 210-233
  active, 227f.
  creative, 228-233
  cultivation of, 231-233
  passive, 225-227
  spontaneous, 213
Immanent activity, 88-90
Immortality of soul, 131-138
Impression, on external sense, 174f.
Impulsive movements, 236
  speech, 319
Individual progress and reasoning, 305f.
Individuality, 39, 113
Induction, 299
Inference, 299-307
Infinite:
  idea of, *see* Apprehension of the Unseen, 283
  as object of will, 340
Inheritance, 310f.
Inhibition, power of, *see* Free will
Innate ideas, 266f.
Insanity, *see* Alternating personality
Instinct, 253-262
  in the lower animal and in man, *(note)* 259

Instinct (*cont'd*):
and passion, (*note*) 261
in reasoning, 304
Instincts, human, examples of, 260ff.
Instrumental cause, 21
Intellect, 103-122, 263
Intellectual apprehension:
distinguished from sensuous perception, 263-282
from thought, 181-184
powers which produce, 266f.
scholastic explanation, 267-282
Intellectual emotions, 251
Intelligence, 263
Intensity of sensation, 180
Intention, 263
Internal senses, 186
Introspection, 25
Intuition, 37
Invention, 263

James, William:
on alternating personality, 222f.
definition of psychology, 1
differs from St. Thomas, 82
on emotion, 243
exponent of Empiricism, 32, 43-49
favors theory of Averroes, 114
on habit, *(note)* 333
instinct, *(note)* 255, 257
on metaphysics, 28f.
notion of personality, 160
objection to soul, 136, 148
on present condition of psychology, 70
Judgment, 265, 292-296

Kant, Immanuel:
intellect cannot apprehend itself, 105
objection to immortality of soul, 136
Keller, Miss Helen, how acquired language, 181-184
Keynes, John Maynard, on conference, 318

Ladd, George T.:
consciousness not a product of brain activity, 99-102
definition of mind, *(note)* 101
definition of psychology, 1

Lake, Dr. Kirsopp, notion of soul, 116
Laws of memory, 199-201
Lenin, character of, 230f.
Le Verrier, and reasoning, 314f.
Levine, Isaac Don, on character of Lenin, 231
Life, 60ff., 131
Locke, John:
differs from St. Thomas, 84
on faculties, 153ff., 158f.
object of knowledge, 36
Locus of the soul, 115
Lodge, Sir Oliver, on science, 4
Logic, 300f.
Love, 250
Ludicrous, 251

Mahaffy, on Descartes, 60
Maher, Rev. Michael, S. J., on intellectual apprehension, 268.

Material cause, 21
Material object, 22
Materialism, 7, *(note)* 122
  and Darrow, 367
  and Warren, 358ff.
Matter and form, 91ff.
Mazella, Cardinal, on the soul, 140
Memory, 193-209
Mental:
  etymology of, 31
  use of, 31
Mental facts, 24f., 163, 165
Metaphysics of Scholasticism, 75-79
Method, 23
Mill, J. S., on univocal term, *(note)* 258
Mind, as understood by:
  Bain, 50
  Berkeley, 33
  Century Dictionary, 31
  Descartes, 58
  Fichte, 39
  James, 43
  Ladd, 99
  St. Thomas, 139ff.
  Spencer, 54
  Titchener, 41
  Subject of psychology today, 1
More, Louis T.:
  on biologists, 141, 367
  on Evolution, *(notes)* 10f.
  on human body, 141
  on law of conservation of energy, 120f.
Moral emotions, 252
Motive, for will, 326
Movement, kinds of, 235-240
Muscular nerves, control of, 330f.

Natural tendencies, 261
Neo-Scholasticism, 69f.
Nervous system, 170-173
Newman, Cardinal:
  on apperception, 323
  apprehension of self, 106
  definition of gentleman, 262
  informal inference of, 302-304
Norsworthy, Miss Naomi, on instincts, 260
Novelty, 251

Objective method, in psychology, 27
Obliviscenee, 206
Of God and His Creatures, 107, 114, 125, 194
Order, Aristotle's, *see* Foreword
Organism, 90
Origen, pre-existence of all souls, 124f.
Osborn, H. F., on Evolution, 6

Pantheism, idealistic, 39
Parallelism, psycho-physical, 117
Passion, 244-249
  and instinct, *(note)* 261
Percept:
  defined, 176
  distinguished from phantasm, 193
  how employed, 186ff.

Percept:
production of, 173-180
Perception, sensuous:
acquired, not sensuous only, 184f.
distinguished from sensation, 176
from thought, 181-184
Personality, alternating, 220-226
Personality, meaning of, 160-162
Phantasm, defined, 193, 269
Phenomena, mental, *see* Introduction to Parts III and IV
Phenomenal psychology, 23-27, 163ff.
Philosophy:
and reasoning, 308
universal science, 20f.
Photograph, mental, 173ff.
Physics, 173, 177f.
Physiology, 171
Plato:
notion of mental faculties, *(note)* 159
of mind, 146
of personality, 160
pre-existence of souls, 124
Play instinct, 261
Poincaré, H., pragmatism, 17
Possibility, absolute, natural, 131-134
Powell, W. J., on instinct, 254f.
Powers:
of all movement in man, 328f.
which produce the intellectual apprehension, 114f., 266-282
Powers of soul:
not different in substance from soul, 122ff.
as proximate principles of mental activities, *see* "Our definition of Mind";
that produce the intellectual apprehension, *see* Faculties
Pragmatism, 16-18
Pride, 251
Prime matter, theory of, 91ff.
Principle, a term in definition of mind, 142ff.
Propaganda and imagination, 226f.
Proposition, meaning of, 293
Psycho-analysis, 216f.
"Psychological moment," the, 3
Psychology, 1f.

Quantity, not of soul, 113

Rational psychology, 27-29, 31ff.
Reasoning, 207-319
and conversation, 317-319
distinguished from apperception, 319-323
and education, 310-317
factors involved in, 299
and individual progress, 309f.
and inference, 299-307
meaning of, 297-309
methods of, 299
and philosophy, 308
and science, 307, 308
and scientific progress, 308f.

Reasoning (*cont'd*):
scientific, by few, 304
unscientific, by all, 315
Recall, of memory, 203
Recognition, act of memory, 202
Reflex action, 236ff., 352
Reflex consciousness, 24
Reid, Thomas, on retention in memory, 195f.
Remorse, 251
Reproduction:
act of memory, 197-202
spontaneous, 198-201
voluntary, 201f.
Responsibility, 339, 367f.
Retention, of memory, 203ff.
Rickaby, Rev. J., S. J., *Of God and His Creatures:*
on creation of soul, 125
on memory, 194
on understanding, 107

Sadness, 250
Scholastic argument, 86ff.
Schools, psychological, 32
Science, 4f.
and reasoning, 307f.
Scientific:
use of word, 5
use illustrated, 6-10
Scientific knowledge, 21
Scientific progress and reasoning, 308f.
Scientific psychology, 3
present position of, 70-79
Scott, W. B., description of Fra Angelico's imagination, 232f.
Scotus, on soul, 140f.
Self, *see* Personality
Self-consciousness, 24
Self-control, *see* Will
Self-preservation, 260
Sensation, act of sentient body, 96
distinguished from sensuous perception, 176
not act of soul alone, 62-66
scholastic argument, *see* Proposition II
Sensations, intensity, quality, and duration of, 180f.
Sense, definition of, 173
Senses:
external, 171f., 175
internal, 186
Sensibility, 173
Sensual emotions, 251
Sensuous acts, subject of Part III
Sensuous appetite, 234-240
Shame, 251
Similarity, law of, 200
Simplicity of soul, 108
Singular, apprehension of, 287-291
Skepticism, pragmatism tends to it, 16
theory of Averroes tends to it, 115
Social ideals and creative imagination, 230f.
Social intercourse, 260
Soul, definition of, 95
for nature, origin, immortality, *see* Part II throughout
various significations of, 1
Species, biological, philosophical, 8

Species, sensibilis impressa, expressa, 176-178
intellectualis, 269
Spencer, Herbert, *see* Double-Aspect Theory
differs from St. Thomas, 83
on mind, 149
Spinoza, Baruch, 149
Spirit, 113
Spiritualists, 32
see Descartes and St. Thomas
Spirituality of soul, 108
Spontaneous acts, 213
Spontaneous generation, 95f.
Stimulation of sense, 174
Straton, Dr. John Roach, on Evolution, 6
Stream of consciousness, 331
Suarez, on apprehension of singular, 287
Subconsciousness, 26
Subjective method, 24-27
Sublime, 251
Substance, material, a compound of matter and form, 90
Substantial, not predicable of soul, *see* Empiricism, also Ladd, 100
predicable of soul, *see* Proposition III, 103-111
Substantial form, 91ff., 112, 122ff., 139
Sully, James, 163f., 188
"Sum of Processes," in Empiricism, 41
Summa Theologica, 80
Supposit, 160f.
Surprise, 251
Syllogism, 300ff.
Sympathy, 251
Synthetic judgments, 294
Synthesis:
in idea of individual, 287f.
in judgments, 294f.
in universal idea, 281

Tact, 310
Temperaments, 334
Theory, scientific meaning of, 15f.
"Thingness," 276
Thomas, St., chief text, 80
texts, 81-85, 96, 103, 105, 107, 111-115, 122f., 125-127, 139f., 142, 144, 146, 186, 256f., 263, 270, *(note)* 340, 341, 343
Thomson, Dr. William, on memory, 197, 207
Thought:
distinguished from sensuous perception, 181-184, 265
our meaning of it, 47
Time of creation of soul, 121-127
Titchener, Edward B.:
exponent of Empiricism, 32, 41f.
on the mind, 28
on reasoning, 310
Tracy, Dr. Roger S., on tears, 244
Training:
of memory, 202-209
of reasoning powers, 310-315
Transcendentals, 276f.
Transformism, *see* Evolution

Transitive activity, 88
Truths of science, 20

Unity of consciousness, 152, 184f., 186ff., 263-276, 326
Universal concepts, 83, 107, 109f.
Universality in intellectual apprehension, 181-184, 264f., 276-278
Unseen, apprehension of, 283-285

Vanity, 251
Vital principle, 87, 95
Volition, *see* Will
Volitional movements, 236, 326f.
Volkmann, on memory, 202

Walking, *see* Ideo-motor action
Wallace, E., *Aristotle's Psychology, (notes)* 2, 152, 159, 223
Walsh, Dr. James J.:
  on auto-suggestion, *(note)* 220
  on psycho-analysis, *(note)* 216
Ward, James:
  on Berkeley, 36
  definition of psychology, 36
  on Empiricism, 41f.
  on law of conservation of energy, 118
Warren, Howard C., objections against free will, 358-361
Weber-Fechner Law, 180
Will, 324-351
  free, 336-351
Windle, Sir Bertram, 4, *(notes)* 17, 61
Winterton, Francis, on Neo-Scholasticism, 69f.
Wisdom, 363
Wit and humor, 213
Wonder, 251
World, New York, 6
Worry, 217f.

Printed by Benziger Brothers, New York

150.02
P 995
7816
PYNE, J.
AUTHOR
The Mind
TITLE
DATE LOANED | BORROWER'S NAME | ROOM NUMBER
Card MAY 7
STORAGE - CBPL
7816